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China Report

ECONOMIC AFFAIRS

SELECTIONS FROM JINGJI DIAOCHA, No. 2, 1984

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CHINA REPORT
ECONOMIC AFFAIRS

SELECTIONS FROM JINGJI DIAOCHA, No. 2, 1984

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INDUSTRIAL ECONOMIC RESULTS

China's Cotton Textile Industry

Beijing JINGJI DIAOCHA [ECONOMIC SURVEY] in Chinese No 2, 1984 pp 1-4

[Article: "Economic Results of Five Industries in China Analyzed" originally drafted October 1982, revised May 1983, responsible editor: Zong Han [1350 1383], Investigation and Research Office of the State Economic Commission]

[Text] I. General Survey of the Cotton Textile Industry

After cotton was introduced into China in the 7th century, a handicraft industry of cotton spinning and weaving began to grow up in China. However, a modern cotton textile industry was introduced into China only in the eighties of the 19th century; its history is only about 100 years old. In the 60-odd years before liberation, the industry had a hard time, struggling under the pressure of the "three big mountains" [imperialism, feudalism and bureaucratic-capitalism], and it was only after the establishment of New China that it gained a new lease on life and was able to rapidly develop and grow strong under the guidance of the party and along the road of socialism. By now, the cotton textile industry has become China's industry of the largest scope, with a solid foundation, a high level of perfection and of excellent economic results.

In 1981 the Chinese enterprises of the cotton textile industry (including printing and dyeing factories) numbered 2,688, with a total output value of 50.08 billion yuan, or 64 percent of the entire textile system. Taking cotton spinning spindles as the main indicator for the scope of the industry's equipment, the number of spindles developed from 5 million in 1949 to 20 million in 1982 with 590,000 cotton weaving looms. Taking spindled cotton and cotton cloth as main indicators for the scope of production, quantities increased from 437,000 tons and 2.5 billion meters in 1950 to 3.354 million tons and 15.35 billion meters. In 1981 the consumption of ginned cotton was 3.462 million tons, or 23.8 percent of the world's total consumption of ginned cotton. Since last year, many cotton textile enterprises paid attention to organizing their production according to the social needs, raising product quality and increasing designs, colors and assortments. Though the state reduced plans for production of chemical fiber cloth, the output value of the textile industry still increased 1.3 percent in 1982 compared to 1981, the

output value of cotton yarn 5.8 percent, the output value of cotton cloth 7.6 percent, the output value of cotton yarn and cotton cloth ranking first in the world and achieving new records in profits, exports and in various economic and technological targets. The large increases in textile production turned the supply-demand situation for textile goods from a seller's market into a buyer's market.

Although this may put a certain pressure on the cotton textile industry, it is also a stimulating factor. Because the textile industry had for many years faced a seller's market, it is unfamiliar with conditions of a buyer's market. Coping with the changed situation requires constant study of the new condition, exploring new ways and rapid adjustments to the new situation in market conditions.

Increases in China's Textile Production (Comparison of 1982 with 1978)	
Items	Increase (in %)
Gross Output Value of Textile Industry	59.6
Average Cotton Cloth Consumption Per Person	33.7
Cotton Yarn	39.7
Cotton Cloth	39.1
Wool Fabric	42.7
Knitting Wool	144
Chemical Fibers	82
Filature Silk	27.6
Silks and Satins	53.8
Gunnysacking	68.5
<p>Note: Filature silk is silk thread reeled from cocoons, one strand consisting of threads from several cocoons glued together. The silk reeled in the reeling mills is called filature silk. If done by indigenous methods it is called "raw silk." Filature silk is being supplied for the weaving of silks and satins, knitwear and to manufacture articles for industrial and national defense uses.</p>	

Enterprises of the cotton industry are located all over our country. All of the 29 provinces, municipalities and autonomous regions have cotton mills. Places with equipment of 2 million or more spindles are Shanghai and Jiangsu; areas with over 1 million spindles are Hubei, Shandong, Henan and Hebei. Areas with from 500,000 to 1 million spindles are Liaoning, Shaanxi, Sichuan, Tianjin, Shanxi, Anhui, Zhejiang and Hunan. In the early years after liberation, 87 percent of the country's spindles were concentrated along the sea coast, especially in Shanghai, Qindao and Wuxi. Now approximately 40 percent of our cotton textile industry is located in the provinces and districts of the interior.

Rate of Increase in Our Cotton Cloth Production Compared with That of of Foreign Countries						
	China	USA	USSR	Japan	W.Germany	Britain
Average Annual Increases in percent, 1953-1980	4.6	-3.1	1.3	0.6	-0.9	-5.9

II. Main Problems in Our Cotton Textile Industry

The cotton textile industry made great contributions to the state, but in recent years manifested some of the following problems:

1. Most Index Figures Fell Below the Highest Levels of Past Performances

In recent years certain changes occurred in the main economic and technological index figures of our cotton industry, but it still fell a certain distance behind the highest levels of past performances. Taking 1981 as example, the average rate of hourly yarn output (mixed numbers) per 1,000 spindles was 4.93 kilos below the highest level of the past (1970), the amount of first grade cotton cloth delivered into storage was down 1.42 percent compared with the highest level of the past (1964), the amount of first grade printed and dyed cotton cloth was 5.73 percent below the best figure of the past (1965), the amount of cotton cloth produced by each loom per hour was 0.34 meters less than the highest level of the past (1970), as detailed in the following table:

Main Economic and Technological Index Figures of China's Key Cotton Textile Enterprises						
	Unit	Highest Levels in the Past		1979	1980	1981
		Year	Index			
Rate of 1st class-grade or above cotton yarn	%	1974	95.2	98.6	98.38	98.59
Average hourly prod'n of 1000 spindles (mixed)	kilo	1970	28.8	25.8	25.79	23.87
Rate of 1st grade cotton cloth to storage	%	1964	97.4	95.6	96.66	95.98
Rate of 1st grade printed and dyed cotton cloth to storage	%	1965	94.5	90.1	90.67	88.77
Utilization rate of cotton looms	%	1959	94.8	98.3	99.54	99.87
Prod'n of each cotton loom per hour	kilo	1970	4.33	4.3	4.15	3.99

2. The Trend of Declining Economic Results in Recent Years

The profit realized from 100 yuan of investment in the cotton industry (including printing and dyeing) has been declining over the last few years: in 1981 it declined 11.95 percent compared to the preceding year; in 1982 it declined 42.44 percent compared to the preceding year and 49.32 percent compared to 1980.

There was also a decline in the textile industry year by year of the profits per 100 yuan of output value, namely: in 1981 a decline of 2.33 percent compared to the preceding year and again in 1982 a decline of 28.35 percent compared to the preceding year and of 30 percent compared to 1980.

The profits realized per 100 yuan of costs fluctuated, sometimes up and sometimes down: in 1981 1 percent up compared to the preceding year, in 1982 16.07 percent down compared to the preceding year and 15.2 percent down compared to 1980.

3. Large Scale Overstocking of Polyester-Blended Textiles

Because of the high price levels and good profits, enterprises in the past eventually all turned to the production of chemical fiber fabrics. In 1981 the actual production of cotton-polyester fabrics and medium-staple and long-staple fabrics was over 600 million meters above plan figures, and stocks in commercial warehouses greatly increased. The stocks of cotton-polyester fabric alone in the warehouses had increased by 500 million meters compared to last year. The result was that industry reported success, commerce reported anxiety, warehouses were overstocked, bank credits were overextended, receipts by the treasury proved illusory and the people at large got the worst of it.

4. Rather Unsatisfactory Basic Work in Some of the Enterprises; Great Disparity in Profits Between the Producing Units of the Enterprises

Let us take profits in producing units of a part of the provincial (municipal) enterprises of the Ministry of Textile Industry system in 1981 as example. When producing No 28 (21-count) pure cotton yarn on bobbins, there was a difference of over three times between the highest and the lowest profit margin achieved by units. There was a difference of more than one time over when producing No 25 and 28 (23-count and 21-count) pure cotton standard cloth. There was almost 50 percent difference when producing No 14/2 and 28 (42/2-count and 21-count) cotton-polyester khaki. Viewing the cotton textile industry as a whole, even though its enterprises instituted high speed production (four shifts with three rotations) with a good utilization of their equipment, the level of material productivity is not very high compared with the advanced levels of foreign countries. There are comparatively weak elements in quota management, original records and econometric work in a part of the enterprises. Because of inaccuracies in their econometric work, a part of the enterprises have come up with huge profits and huge losses. Due to the unsatisfactory basic work, the original records cannot really reflect the true conditions of the enterprises.

III. Main Reasons for the Decline of Economic Results in the Cotton Textile Industry

1. Increases in Cotton Prices Increase Manufacturing Costs of Cotton Goods

In the past, cotton prices in our country had been unproportionately low and thereby detrimental to the development of cotton production. By decision of the State Council, cotton procurement prices have been raised three times since 1978. This had a positive effect on arousing the enthusiasm of the peasants, promoting the development of cotton growing, increasing peasant incomes, raising the living standards of the peasants and developing the excellent state of our stability and unity. At the same time, the raising of cotton procurement prices directly increased the manufacturing costs of cotton goods. Add to this, the lack of planning and of accuracy of cost controls in certain individual enterprises, the irresponsible cramming of production costs in violation of regulations and allowing estimated costs to take the place of actual costs, all these factors have had a detrimental influence, to varying degrees, on efforts to raise economic results in the enterprises.

2. Lower Prices for Cotton-Polyester Textiles

Prices for cotton-polyester fabrics were lowered by 15 percent as of November 1981. The range of price reductions was not altogether the same in all localities. In some provinces the prices for cotton-polyester fabrics fluctuated downward at a difference of 20 percent compared with Shanghai. The general price reductions all over the country greatly reduced enterprise incomes. The costs of manufacturing ordinarily ginned products is 3 percent lower than finely ginned products, but prices are 10 percent lower and the profit margin is almost down to the level of pure cotton cloth. Some localities, in order to accelerate marketing, adopted various methods of arbitrary price reductions in the process of price readjustments with the result that a trend set it that left prices for cotton-polyester cloth without any effective control.

3. Stocks of Chemical Fiber Fabrics Increased, Sales Stagnated

The reasons were: (1) a blind rush to increase production value. The plan for 1981 prescribed production of 2.8 billion meters of polyester-cotton blended fabric, but since the output value of polyester-cotton blended fabric was high and it yielded good profits, many places disregarded the capacity of the market, vied with each other in importing raw materials and increased the production of polyester-cotton blended cloth, resulting in an overproduction of 660 million meters for the whole year. (2) Prices were unproportionately high. In the last few years, the quantity of chemical fiber products rose steeply; people in the cities generally had one or two garments of polyester fiber. Because chemical fiber products were durable and longlasting in wear, also high in price, sales volume in the market dropped. (3) Technological transformations in certain old factories could not keep up with the demands of production development. In one part of the enterprises the later rearrangement of equipment did not result in a replete set of equipment, and the production of medium-staple and long-staple products and the woolen feel

of the outer garments made of knitted polyester was unsatisfactory. The unsatisfactory quality of a part of the products adversely affected their reputation. (4) Marketing channels were not sufficiently opened up, so that it was a general occurrence that goods were overstocked at the textile wholesale centers, but that there was insufficient supplies at the basic retail stations and at the rural supply and marketing cooperatives.

IV. Some Suggestions Toward Raising Economic Results in the Cotton Textile Industry

1. Reduce Stocks, Expand Markets, Remedy Present Sluggishness in Sales of Some Lines of Chemical Fiber Products: (1) It is necessary to continue to firmly adhere to and implement the norms for limited production prescribed by the state, furthermore, to make every effort to develop assortments of good quality and moderate prices which the market will find satisfactory and suitable, and which will be conforming to the needs of the urban and rural markets and of the export trade. (2) To carry out a one-time disposal in a planned manner of all articles unfit for the markets and of all products of inferior quality. (3) Expand one step further the quantity of chemical fibers used in the three types of cloth (industrial, public use, labor protection), have chemical fibers used everywhere, excepting only the small number of cases where cotton cloth is absolutely required. (4) Energetically expand the exports of chemical fiber products. (5) Restructure the circulation system and promote coordination between production and marketing.

There are now certain provinces and municipalities that are in the process of combining the business management at all levels of trade in textile goods with the wholesale organizations and the corresponding production departments of the textile industry, to achieve a restructured unified management of production and marketing. All other localities must adopt a positive attitude of their own accord effect coordination, closely link production and marketing and open up all channels of production and marketing.

2. Study the Question of Comparative Pricing of Chemical Fiber Products and Their Overall Benefit for the State: Every 100 meters of polyester-cotton fabric, from the production of the chemical fiber and the spinning and weaving processes to its commercial sale, produces 6.5 times more total income in state taxes and profits than 100 meters of pure cotton cloth. Even after last year's price reductions, the benefits from polyester-cotton cloth were 2-3 times higher than those from pure cotton cloth. After an appropriate readjustment of the prices, the economic results from a larger production of marketable polyester-cotton textiles will still be outstanding.

3. Develop Greater Variety, Emphasize Assortments and Quality: The production of marketable goods is not only a matter of "determining production on the basis of what is marketable," i.e. organizing production according to the needs of the domestic and foreign markets, but also a matter of "promoting sales by means of what is being produced," i.e. actively developing and creating rich and colorful, original and varied assortments and designs to promote consumption, expand the market and give impetus to the further development of the cotton textile trade. When developing products, it is necessary to firmly pursue certain major pioneering items, draw up plans and incorporate them in the long-range as well as in the annual plans. It is

necessary to maintain a certain proportion in basic items needed by the masses, but there must be no rushing ahead with their production or stopping their production. It is necessary to energetically strengthen market investigation and forecasting, to study the increasing purchasing power in the market and its structure as well as the changes in the international markets.

4. Instituting a System of Normative Cost Management: Cost management is a major component of the economic management of enterprises. The cost of a product is a comprehensive index which reflects the production and business activities of an enterprise. The accurate reflection of the true level of rises and declines in the costs of a product manufactured by an enterprise and thus enabling comprehensive comparisons of cost price levels between enterprises will be helpful in facilitating comparisons, learning from each other, catching up and rendering assistance among the enterprises of the same trade or industry. It is suggested to institute a unified system of normative cost price management within the cotton textile industry (a system that is already being practiced in a part of our provinces and municipalities) in order to promote the continuous increase in the economic results in the cotton textile industry.

China's Woolen Textile Industry

Beijing JINGJI DIAOCHA [ECONOMIC SURVEY] in Chinese No 2, 1984 pp 5-7

[Text] I. General Survey of the Woolen Textile Industry

China's woolen textile industry was initiated in 1876 with the establishment of its first woolen mill, the "Gansu General Bureau of Woolen Textiles." Since that time until the liberation of the entire country in 1949, i.e. in a little over 70 years, China's woolen textile industry has put into operation a total of 130,000 wool spindles of which one-third were operated by foreign traders. From the establishment of New China until the end of 1982, in 30-odd years of construction, the production capacity of China's woolen textile industry has reached 889,000 spindles, or 5 1/2 times what the total capacity was throughout the 70 years before liberation. Out of this amount, 386,000 spindles were for worsted material, 98,000 spindles for coarse woolen cloth, 46,000 spindles for woolen blankets, 81,000 spindles for woolen yarn, 220,000 spindles for fine knit goods, 19,000 spindles for coarse knit goods and 39,000 spindles for other materials.

China is gradually beginning to take shape as a wool textile complex capable of manufacturing the ten large categories of worsted, coarse woolen, knitting wool, woolen blankets, camel hair cloth, plush woolen material, woolen sweaters, industrial woolen cloth, industrial blankets and imitation furs.

As to the distribution of our woolen textile industry, before liberation 90 percent of its installations were concentrated in a small number of coastal cities, such as Shanghai, Tianjin and Beijing, Shanghai alone accounting for 73.5 percent. After liberation, the state established a

number of woolen textile enterprises in the interior and in the sheep's wool producing areas (Inner Mongolia, Gansu, Xinjiang, Qinghai, etc.), and the proportion of woolen textile industry in the interior has risen from 10 percent shortly after liberation to over 33 percent.

As to the resources of sheep's wool, in 1949 there were 26 million sheep throughout the country, which could only supply around 15 percent of the requirements that would satisfy the capacity of the industry's equipment, and the wool, furthermore, was of a very inferior quality. The country's woolen textile industry had to rely to over 80 percent on imports of fine wool, semi-fine wool and woolen yarn to maintain its production. By 1982 our sheep population had increased to 110 million heads, i.e. over three times what it was in 1949, and in numbers ranked third place in the world, only behind Australia and the Soviet Union. In wool production China ranked fifth in the world. In 1982 the amount of wool procurements was 176,000 tons (raw wool), or over five times more than the 29,000 tons shortly after liberation. Supplies of sheep's wool to the woolen textile industry were 132,600 tons, of which 119,000 tons were improved quality wool.

In the wake of the development of our animal husbandry, there was a rapid increase in our production of woolen goods, varieties continuously increased and quality was markedly improved. In 1982 new increases were again registered in the production of woolen piecegoods and woolen yarn on the basis of the 1981 production, reaching 15 times and 30 times, respectively, the quantities produced in the record year (1947) before liberation.

Before liberation, our woolen textile industry could produce only a few types, such as blankets, coarse woolen cloth and serge, and basically could not produce high quality garment material. Now the industry can manufacture everything, from coarse to finest worsted, from knitting wool to blankets, from piece dyed to strip dyed, from pure woolen material to material blended with natural or any kind of chemical fibers. Some of these products, such as palace, high class gabardine, fancy suiting and wool-polyester blends, enjoy a good reputation in the international market. In the past, cloth and felt for industrial purposes, such as felt for paper-making and use in pianos, or cloth for motion-picture screens, had to rely almost completely on imports, but are now completely provided from domestic production, and some items are even being exported.

Much progress has been made in improving the quality of our woolen products, such as feel, lustre, freedom from outward defects, colorfastness and shrinkage resistance. Shrinkage of woolen products, which was as high as over 5 percent before liberation, is now down to around 3 percent. The ratio of first grade goods, which would reach only 10-30 percent soon after liberation, has now been raised to about 90 percent.

The woolen textile industry is achieving comparatively good economic results within the textile industry as a whole and was able to accumulate much capital for the state. In 1982, there was another rise in the gross output value of the woolen textile industry, accounting for 5.58 percent of that of the entire textile industry and providing a considerable amount of profits

and taxes. The profits and taxes per 100 yuan of output value were 49.4 percent higher than the average levels in the textile industry as a whole. During all the 30-odd years since liberation, the state used only the equivalent of 89 percent of profits and taxes realized by the woolen textile industry in the one year of 1981 for capital investments in the woolen textile industry. The following simple table lists a few economic index figures for the woolen textile industry:

Profits realized from 100 yuan capital	49 yuan
Profits, taxes realized from 100 yuan capital	91 "
Profits realized per 100 yuan of the original value of fixed assets	41.3 "
Profits, taxes realized per 100 yuan of the original value of fixed assets	76 "
Profits realized per 100 yuan of gross industrial output value	16.7 "
Circulating capital taken up per 100 yuan of gross industrial output value	34 "

(Note: 100 yuan capital refers to net value of fixed assets with fixed quota of circulating capital)

II. Main Problems Existing in Our Woolen Textile Industry

While our woolen textile industry has achieved the above-stated successes, it is still facing many problems, and compared with the advanced levels in foreign countries, there is still quite some discrepancy:

1. Its level of production is low. Although our woolen textile industry has established a certain foundation, having reached over 889,000 spindles by 1982, a five-time increase compared to the time soon after liberation, yet this is still only the South Korean level of the 1970's and far behind the levels of Italy, Japan and the United States. The following table gives the condition of the woolen textile industry in various countries in recent years:

	Italy	Japan	USSR	USA
Woolen yarn spindles	338.5	256.3	220	130
(in 10,000)	(1977)	(1977)	(1975)	(1978)

Examining the rate of development, Japan added an annual average of over 60,000 spindles during the 25 years from 1951 to 1976; the Soviet Union added an annual average of 90,000 spindles during the 16 years from 1960 to 1976. China, during the 32 years since liberation, only added an annual average of over 10,000 spindles. The main reason for the rather slow development in numbers of spindles was the restriction placed on developments by the domestic production of wool. Imports of wool are now increasing year by year. In the 1970's around 10,000 tons of wool were imported annually, this increased to 20,000 in 1980, and in 1981 45,000 tons were imported.

2. Types and quality of products were not suited to meet the needs of the domestic and foreign markets. A part of the goods exported by our woolen textile industry were in quality standards, as e.g. the elasticity, feel and lustre of our worsted, only equivalent to British medium and low quality levels, and far inferior to the famous Japanese brand products. The coarsely woven woollens were even inferior to the general products from Italy. Because of their unsuitable colors and designs, no large exports could be contracted for, and sales prices for our products on the international market were rather low. There were also problems with types and quality of goods marketed domestically, some became overstocked, some were selling too slow, as they were not suited to meet the needs of the market.

3. Backward production technology. The equipment manufactured domestically for our woolen textile industry is mostly of pre-cultural revolution design. Even equipment manufactured according to recent research is only equivalent to the standards of the early 1960's in foreign countries. With the exception of the worsted fine yarn and weaving looms, where per unit yield approximates that of foreign countries, the output per single machine in other processes, especially in fine combing and pre-weaving equipment is only half of that of foreign countries.

Our techniques are backward, there are too many manual operations and too little automation. In foreign countries, high speed roller finishing machines, automatic bobbin changers, automatic rethreading devices, automatic shuttle changers, controls for single dyeing and finishing machine units, etc. are all generally being employed, but nothing of the sort is being used in the equipment that is domestically designed, and the bench performance for the main work processes is only about half of what it is in foreign countries. As to dyeing and finishing, many special methods of finishing are not yet being used, or are now merely in the experimental stage.

The technological and managerial level is very low in all the enterprises of the woolen textile industry that were recently newly established or expanded. There are, moreover, no stable channels for the supply of raw materials, dyes, chemicals and materials for maintenance and repairs which the woolen textile enterprises need, and where there is a serious shortfall in quantity and quality.

III. Preliminary Suggestions for the Development of the Woolen Textile Industry

1. Energetic development of domestic sheep breeding. It is necessary to institute a planned breeding of wool sheep, improving the stock, raising wool yield per head and improving types and quality of sheep wool (mainly staple-length of wool, lustre, elasticity and washability). While exerting much energy on the improvement of the stock of wool sheep, it is also necessary to pay attention to the protection and development of our resources of high grade coarser types of wool, such as cashmere and Xining wool, and to develop energetically the production of semi-fine wools, to alleviate the present serious shortages of knitting wool. Only by the expansion of our sources for sheep wool, can the development of our woolen textile industry count on stable supply channels for its raw materials.

2. First priority must be the improvement of quality and increases in colors, designs and types of articles. We must strengthen planning work, effectively investigate and research the domestic and overseas markets, adapt to changed conditions and the demands of the seasons by producing colors, designs and types of articles that suit the markets and sell well; we must change the present state of much copying and little original creativity. We must in good time guarantee the supply of dyes and chemicals needed for the production of export goods. To improve the competitive strength of our export goods, we must join the relevant international organizations (e.g. the IWS, short of International Wool Study Bureau) and organize production and raise quality according to the internationally recognized quality standards (as e.g. by the ISO, short for International Standards Organization) and appraisal methods. We must energetically strengthen quality management by learning from foreign experiences in advanced technologies and scientific management, and must integrate their methods with a summing up and wide application of our own successful experiences.

3. Strengthen our capabilities for manufacturing woolen textile machinery and effectively restructure technology in our old enterprises. It is suggested that the departments in charge of the machine-building industry assist the woolen textile industry in the joint active development of our capacities for the manufacture of woolen textile machinery, so as to be able as soon as possible to produce complete basic sets of equipment for the dyeing of woolen fabrics. We must strengthen machinery design and research work and as much as possible make use of domestic and foreign scientific research and innovative achievements to improve the efficiency of our machinery and most gradually achieve working in continuous operations, mechanize our manual operations, install automated work control systems and instruments for all quantitative checking and measuring. We must, furthermore, use new types of high speed and highly efficient equipment to replace the old items of equipment which prove to be weak links in our industry, as, for instance, having electronic cone winders and multiple thread twist machines which have electronic thread clearers attached in the work process of twisting from cones; use in our weaving operations "arrow shafts," "chip shuttle" weaving machines and high speed "sectional straightness regulators." In dyeing and finishing operations we must use bobbin dyeing machinery, combined washing and shrinking machinery, etc. On old equipment we must attach new types of specialized parts, such as "large cradle stretching system" on the fine yarn machinery, high speed choppers on the carding machinery, high speed carding devices on the comb carding machinery and self-regulating level spacing devices on the coarse wool spinning and carding machinery, and we must also propagate for widest use specialized equipment for processing of pure synthetic fiber. We must effect the transformation of all old enterprises in a planned way introducing into them equipment of an advanced technological level.

China's Papermaking Industry

Beijing JINGJI DIAOCHA [ECONOMIC SURVEY] in Chinese No 2, 1984 pp 7-11

[Text] I. General Survey of the Production of China's Paper Industry

Papermaking is one of China's four great inventions. Historically, papermaking in China is by over 1,500 years older than the mechanical manufacture of paper in foreign countries invented only as late as 1799.

Before liberation, due to the corrupt rule of the reactionary KMT regime and the destructions and plundering of imperialism, our papermaking industry was extremely backward. In 1949, only 108,000 tons of paper were produced. After the establishment of New China, our papermaking industry was reborn. During the period of our First Five-Year Plan, the state made a very substantial investment in our papermaking industry and built up several key paper mills at Jiamusi, Guangzhou, Nanping, Hanyan, Baoding, Liaoyang, Yibin and Chongqing. In the following 20-odd years, quite a number of new installations were built up one after the other. Up to the end of 1981, there were altogether 4,381 papermaking enterprises throughout the country (of which 1,625 belonged to the system of the Ministry of Light Industry) with a production capacity of 6,368,700 tons of paper and paperboard. In 1981 the production of paper and paperboard reached 5.4 million tons, a 48-times increase compared to 1949 production. However, this was still low compared with the production in the advanced countries and cannot by far satisfy the needs of our developing national economy. For details, see the table which follows.

During the past 30-odd years, the quality of products made by our papermaking industry was continuously improved and the variety of products much increased. Shortly after liberation, only 30 different types of machine-made paper were produced, these have now increased to over 400. It is presently not only possible to produce all kinds of paper for educational and cultural uses, for packaging and for daily use, but also special paper required for sophisticated technological uses in industry, agriculture, postal, telegraph, communications services and in architecture.

However, generally speaking, our papermaking industry is still rather backward. In 1977 the average per person paper consumption was 40 kilos, in the developed countries 100 kilos, but in China only about 5 kilos. The most acute problems faced by our paper industry at present is the unsatisfactory state of its economic results. Statistics show that out of the 4,378 papermaking enterprises with independent accounting systems in our country, 1,249 enterprises, or 28 percent, incurred losses, and the losses were even more serious in papermaking enterprises belonging to the system of the Ministry of Light Industry. There were 320 enterprises in 1980, increasing to 429 in 1981, while the ratio of those incurring losses increased from 23 to 37 percent. The amount of these losses rose from 36.23 million yuan to 85.69 million yuan, which is an increase of 136.5 percent. In 1980 the papermaking enterprises belonging to the Ministry of Light Industry system turned over 1,374.62 million in profits and taxes to the state,

Output and Rate of Increase of China's Papermaking Industry

5-Year Plan Period	Year	Output (in 10,000 t)	Average Annual Increase (%)	Average Increase (%) 1950-1981
	1949	11		
	1952	37		
First	1953	43		
	1954	52		
	1955	58	19.7	
	1956	73		
	1957	91		
Second	1958	122		
	1959	170		
	1960	180	4.2	
	1961	110		
	1962	112		
	1963	128		
	1964	145	15.6	
	1965	173		
Third	1966	209		12.9
	1967	196		
	1968	177	6.9	
	1969	217		
	1970	241		
Fourth	1971	263		
	1972	282		
	1973	313	7.2	
	1974	299		
	1975	341		
Fifth	1976	341		
	1977	377		
	1978	439	9.4	
	1979	493		
	1980	535		
Sixth	1981	540		

1976 Output of Paper in Various Countries

Countries:	USA	Japan	USSR	FRG	France	Britain	China
Output in 10,000 t:	5,523	1,539	890	638	461	409	341

but only 1,157.46 million yuan in 1981, a decline of 16 percent. Also compared with conditions abroad, the economic results of our papermaking industry are very unsatisfactory. For instance, in 1978 the output of alkaline-process paper pulp was 2.5 million tons, using 620,000 tons of caustic soda. In the United States in 1968 the output of alkaline-process paper pulp was 24 million tons with a consumption of 600,000 tons of caustic soda. The consumption of caustic soda was basically the same in both countries, but the paper pulp produced in the United States was nine times the Chinese production.

II. Main Factors Adversely Affecting the Economic Results in Papermaking in China

1. The irrational structure of the sources of raw materials: The main raw material components for papermaking are wood fibers and non-wood fibers. The wood fibers are derived from logs of such trees as Korean pine, white pine, larch and poplar. The non-wood materials are reeds, stalks of plants after threshing, bagasse, various straws, etc. Ordinary paper, medium quality paper and general paperboard for packaging mainly use straw as raw material, but newsprint, kraft and special papers for industrial, scientific and technical purposes must necessarily have wood as raw material. Straw as raw material is very silicious, presents difficulties in soda recovery and is costly. Wood as raw material not only is free from this drawback, but can improve quality very much, enables increases in variety and is showing comparatively good economic results. However, in view of the fact that China has limited resources of wood, the paper industry has for a long time always relied on straw as main raw material, accounting for about 75 percent of all raw material, and our timber raw material included annual imports of 400,000 to 500,000 tons of wood pulp, to make up the other approximately 25 percent. The shortage of our natural resources of timber is only one of the reasons for the irrational raw material structure of our paper industry, another important reason is the conceptional onesidedness and incompetence in work. The "quarrel over straw and wood" for paper raw material that raged in 1958 was not a scientific study of how to expand wood production and to make the transition from straw to timber as main raw material, but was rather a fundamental rejection of wood as paper raw material. From then on, the idea of using timber for papermaking became a forbidden zone and not only was growing timber for papermaking never made part of the national plans, but establishing on one's own initiative fast-growing timber bases for papermaking was criticized as "not engaging in legitimate work." The developmental experiences of all countries in papermaking indicate clearly that using wood

as raw material in papermaking is the direction for the paper industry to move to achieve high quality and quantity production, production of great variety and production with high economic results, while we for a long time remained satisfied with the manufacture of paper from straw. The papermaking industry was therefore unable all this time to achieve a fundamental change, especially with regard to its unsatisfactory economic results.

2. Too few large-scale and medium-scale enterprises and too many small-scale enterprises: Papermaking technology is rather complex and the required investment is approximately the same as for heavy chemical industry. For example, the fixed assets required for every 100 yuan of output value, according to statistics for 1978, are 37.7 yuan for the average level of light industry, but 89.1 yuan in case of the papermaking industry, which is more than double the average level. Is it more profitable in the papermaking industry to concentrate capital and build large-scale and medium-scale enterprises or better to scatter capital funds for the establishment of many small-scale enterprises? This question cannot be answered categorically, but on general balance it is still more profitable to build as far as possible large-scale and medium-scale enterprises, because they will have an advantage over small-scale enterprises with regard to capital funds, technology, factory buildings, techniques, personnel and the procurement of raw and other materials. It will also be easier for them to employ modernized technologies and installations and modern methods of business management. They have been particularly much better than small-scale enterprises in the prevention of pollution (the papermaking industry discharges every year approximately 2 billion tons of waste water). According to the 1978 statistics for the 1,223 paper mills under the Ministry of Light Industry, the profits turned over for every 100 yuan of original fixed assets were on the average 16.7 yuan, but in the case of the large-scale Qingzhou Paper Mill and the Jinzhou Paper Mill they amounted to 40 yuan in both cases, almost 1.5 times above the average level. In our policy on establishing papermaking enterprises we have for a long time past never properly dealt with the relationship of large, medium and small-scale enterprises. During the period of our First Five-Year Plan, main emphasis was on large and medium-scale items and 23 above-norm enterprises were newly built or newly expanded, achieving remarkably good economic results, with an average annual 19.7 percent increase in output, it was the best period ever since the establishment of our state. In 1958 we started to promote "small [blast furnaces], indigenous [blast furnaces] and mass movement [for steel production]" and the number of enterprises grew abruptly from 164 in 1957 to 1,500 in 1960, but with very unsatisfactory economic results. During the period of readjustments in the early 1960's, we were compelled to effect the "closures, suspensions, mergers and retooling" which reduced the enterprises to 500, but in the succeeding 10 years, small-scale paper mills bloomed forth everywhere and by the end of 1981 the number of papermaking enterprises had again reached to as many as 4,381. However, there were only 26 large-scale enterprises (of an annual output of 30,000 or more tons), accounting for 0.6 percent, and only 99 medium-scale enterprises (of an annual output of 10,000 to 30,000 tons), accounting for 2.3 percent; the remaining 97.1 percent were 4,256 small-scale enterprises. Most of these small-scale enterprises have little capital, are weak in technology, backward in techniques, have simple and scanty equipment and produce unsatisfactory

quality goods at high cost. Because of their large numbers, they account for about half of our total production and have an adverse effect on the economic results of the papermaking industry as a whole.

3. Irrational management system, bad enterprise management: To handle key and important enterprises by at times tightening controls and at other times again relaxing controls creates waste. At the time of the First Five-Year Plan, the Ministry of Light Industry had 47 enterprises under its direct control. These enterprises accounted for 66 percent of the total national output, the remainder being enterprises controlled locally. As the relations between central and local authorities were handled comparatively well, the papermaking industry made quick progress. At the time of the great leap forward in 1958, the enterprises under the direct control of the ministry had all their personnel sent to work in the rural areas, calling it "ten thousand horses galloping ahead." In actual fact it was letting things drift unrestrainedly, and the result was that less work was done, it was done slower, badly and wastefully, with no gains anywhere to compensate for the losses. After that came the time of readjustments, consolidation, replenishments and elevating our guiding principle, when 13 enterprises were withdrawn one after the other, when specialization in the management of the papermaking industry was strengthened and when the level of production began to rise again. During the decade of turmoil, the entire personnel of the enterprises directly under the Ministry of Light Industry were once more sent into the rural areas, the China Papermaking Corporation was dissolved and complete chaos reigned in the management of the papermaking industry. The quality of its products dropped and its losses grew larger and larger. Looking again at the question of jurisdiction over the bases for raw and other materials, there was, for instance, the Panjin Reed Farm in Liaoning Province, originally under the management of the Ministry of Light Industry, whose output rose from 40,000 tons soon after liberation to 152,000 tons in 1956. In 1950, its personnel was sent for work into the countryside, in 1963 it became administered by the agricultural authorities, in 1964-1968 it was run by the provincial authority in charge of light industry, in 1968-1972 it was again managed by an agricultural authority. Since 1972, the upper sectors were under the light industry and the lower sectors under the agricultural departments, with little coordination between the two, in fact nobody was really in charge. The result was that the area of reed fields which was 1.6 million mu soon after liberation decreased to a little over 800,000 mu. There are still many problems, furthermore, in the management of papermaking enterprises. The system of personal responsibility for each section of the production line is not functioning properly. There is much "bustling, pretending, dripping and leaking," and cost accounting is not strictly carried out. These problems all seriously affected efforts to raise the economic results in the papermaking industry.

4. Price increases in raw and other materials: The price increases and disguised forms of raising prices in the last few years had very serious adverse effects on the economic results of the papermaking industry. We understand that the prices for timber have been raised twice, each time to the extent of about 20 percent. Profits at our largest enterprise, the Jiamusi Paper Mill, had been 50.87 million yuan in 1980 and 37.58 yuan in

1981, a drop of 13.29 million yuan, of which 12 million yuan, or 90 percent, must be ascribed to the factor of increased prices for raw and other materials.

III. The Way Toward Increased Economic Results

1. Proper regulation of the relationship between paper production from grasses and from timber; energetic development of papermaking from timber: Our country grows many kinds of grassy plants, and reeds, bagasse, wheat stalks and rush, suitable for papermaking purposes, are extremely plentiful. We should therefore continue to actively promote papermaking from grasses, however, we must also not reject and exclude papermaking from timber on the grounds that our present resources of timber are limited. Papermaking from timber is after all the direction in which papermaking is going to develop. Many foreign countries with limited forestland are exerting themselves in every possible way to take that direction, and we too must not be content with things as they are and remain passive. We must first of all devote a major effort to afforestation. Our present percentage of forest cover is 12.7 percent, which is 22 percent below the average world level, and much lower compared with some countries, such as Finland (which has 71 percent cover). We must, furthermore, energetically promote papermaking from chips of broadleaf forest trees. At present, countries in West Europe, Japan and countries in South America, all comparatively deficient in timber from coniferous forests, are studying the problem of widest use of chips from broadleaf forest trees. Much success has already been achieved, technologically and with regard to equipment, for the grinding into pulp of pre-heated broadleaf tree chips, pressurized grinding of wood chips into pulp, grinding chemically pre-heated wood chips into pulp and for the mechanical grinding into pulp of chemically treated wood chips. Moreover, using these types of pulp, large quantities of newsprint paper, kraft, typographic printing paper and copper plate paper have already been manufactured. Paper production in Japan in recent years was about 15 million tons, and broadleaf wood accounted for around 50 percent of the raw material. In China too, preliminary experiences have been gained in the manufacture of paper from broadleaf wood chips. For instance, the Yalujiang Paper Mill replaced white pine wood pulp by birch pulp to produce newsprint paper, and the extraction capacity from pulp as well as the printability achieved were basically up to the quality standards for newsprint paper. This type of transformation will, on the one hand, not require much alteration of the present technical equipment and, on the other hand, can reduce the consumption of wood used as raw material (a saving of 0.5 cubic meter of timber per ton of newsprint paper). The four paper mills of the Northeast produce 148,000 tons of newsprint paper per year. If all will follow the mentioned experience, 148,000 cubic meter of white pine could be replaced by birch wood, and, furthermore, 72,000 cubic meter of white pine timber could be saved. Taken as a whole, our country lacks timber resources, but relatively speaking there are more broadleaf forests than coniferous forests. Efforts to employ technologies that use broadleaf wood chips for the manufacture of paper are therefore of major significance for raising the proportion of wood in papermaking and to improve the economic results of the papermaking industry as a whole.

2. Strive to raise product quality; promote widest use of scientific and technological achievements: Due to the strengthening of our scientific and technological work at our papermaking industrial front, product quality has markedly improved, and in 1982 eight products won silver medals and six products received the high quality product award from the Ministry of Light Industry. When the Shiyuan Paper Mill in Jilin Province improved the quality of its newsprint paper and reduced the weight of its paper from the state-prescribed 51 gram per square meter to 47.6 gram per square meter, it could, as a result, increase the folio pages of newspaper the size of the PEOPLE'S DAILY from 45,960 to 48,900, i.e. print 2,940 pages more. Papermaking requires extremely large amounts of water, namely for each ton of paper about 400-500 tons of water, and the question of how to improve the technology so as to economize on water is of decisive significance for greater economic results in the papermaking industry. In the last few years, our papermaking industry has widely propagated an advanced technology of closed circuit water use when pumping pulp stock, which has shown initial successes. In 1981, 56 papermaking machines in Tianjin have used this technique and could reduce their water consumption at the pulp stock pumping department from the past approximate 300 tons to 104 tons, and were thus able to save a total of 50,000 tons of water as well as to recover 5 tons of pulp stock per day. In 1982, they estimate they will be able to save about 70,000 tons of water and recover 5-6 tons of pulp stock per day. According to computations by the departments concerned, if the entire industry would employ this technology, even if the saving in water at the pulp stock pumping department is 200 tons per ton of paper, and recovery of pulp stock is 30 kilos, the industry will be able by 1985 to save 500 million tons of water and recover 150,000 tons of pulp stock every year.

3. Reorganization of enterprises and improvement of business management: There are many papermaking enterprises throughout our country, but few who show good business management. The overall reorganization of the industry and strengthening its business management will therefore play a decisive role in the development of potential productive forces, in raising economic results and in achieving a fundamental change in the backward state of our papermaking industry. When the Jiamusi Paper Mill formulated its 1982 production plan, it took the higher prices for raw and other materials and other factors into consideration and estimated that production and profits in 1982 would drop 7.2 and 16.6 percent, respectively, compared with 1981. Due to the fact that they carried out a reorganization of their enterprise and resolutely effected economies in coal, electric power and oil consumption, instituted an economic responsibility system and a system of contracting for quotas and also improved economic accounting, the first half of the year not only did not show any decline as compared with the level of the preceding year, but displayed rather substantial increases. Judging from a macroeconomic viewpoint, it is urgently necessary for our papermaking industry to effect reorganizations, combinations and specialization of production. The proportion of large and medium-scale enterprises must be expanded and certain backward enterprises that produce low quality goods and operate ineffectually must be eliminated. In this way alone can a marked improvement be achieved in the economic results of the papermaking industry as a whole.

Local Medium and Small-Scale Iron and Steel Industry

Beijing JINGJI DIAOCHA [ECONOMIC SURVEY] in Chinese No 2, 1984 pp 15-21

[Text] The local medium and small-scale iron and steel enterprises were mainly developed during the period of the "great leap forward," 1958-1960, and again at the time of the "five small industries" [which communes were encouraged to operate on a local, small-scale basis]. Because many of these medium and small-scale iron and steel enterprises were set up without regard for actual needs or capabilities or considerations for product quality and economic results. Their technology and equipment was backward, their products were of low quality, their consumption was high and they incurred considerable losses. It was therefore twice, in 1962 and again in 1974, that the projects were abandoned and reorganizations carried out, with the state suffering losses and wastage. However, due to the fact that they were soundly rooted in their localities, could obtain their materials locally, utilized mineral resources that were not centrally controlled and produced items needed in local industrial and agricultural production and by the people in their daily lives, the local medium and small-scale iron and steel enterprises showed a tenacious vitality. After 20-odd years of endeavors in the various localities and several large readjustments and reorganizations, especially the effective readjustments and reorganizations carried out following the 3d Plenum of the 11th CPC Central Committee, there had been a remarkable improvement in the product quality and the economic results of these local medium and small-scale iron and steel enterprises, and they have become an indispensable force in our national economy. In the course of implementing the spirit of the 12th CPC National Congress and initiating a new overall situation of socialist modernizations, the question of how to have the local medium and small-scale iron and steel enterprises fully play their role has become a major topic in the various localities and metallurgical departments.

I. The Fundamental Condition

In 1949, China's medium and small-scale iron and steel enterprises had an annual production capacity of only 1,000 tons of steel, 6,000 tons of steel products, 55,000 tons of iron, 230,000 tons of iron ore and 41,000 tons of coke. They were mainly located in a few large and medium-size cities. After 30-odd years of construction, they have now become a basis of considerable proportion. By the end of 1978, there were 1,443 local iron and steel enterprises of county and higher rank, of which 81 were medium-size key enterprises (including 25 key mining enterprises), employing a total of 1.01 million people. Their annual output was 4.194 million tons of steel, 5.794 million tons of steel products, 9.67 million tons of pig iron, 31.52 million tons of iron ore and 7.927 million tons of engine coke. By the end of 1981, after a few years of reorganizations, there were still 1,078 enterprises left (of which 56 were key enterprises, 25 independent key mines, 29 of 100 million or more yuan investments, and 21 that employed 10,000 or more personnel). Their total staff and workers numbered 1.1 million persons, and their total output in that year was 6.27 million tons of steel and 9.22 million tons of pig iron. With the exception of the autonomous region of Tibet, every province, municipality and autonomous region in China has its own local iron and steel industry. For details, see the following table:

Condition of Readjustments in the Local Medium and Small-Scale Iron and Steel Enterprise Following the
3d Plenum of the 11th CPC Central Committee

(Unit: single enterprise)

Areas	Years	Total No. of Enterprises	Iron & Steel	Iron Alone	Steel Rolling Mills	Metal Products	Iron & Metal Plants	Iron Ore Mines	Coal & Coke	Others
National Totals	1978 1981 Up/Down	1443 1078 -365	156 107 -49	467 200 -267	145 195 +48	36 39 +3	59 66 +7	167 137 -25	51 37 -14	367 299 -68
Southwest	1978 1981 Up/Down	142 111 -31	17 13 -4	86 45 -41	6 12 +6	2 3 +1	4 3 -1	4 11 +7	2 0 -2	21 24 +3
Northwest	1978 1981 Up/Down	99 59 -40	13 9 -4	41 12 -29	2 6 +4	2 1 -1	2 4 +2	10 7 -3	15 8 -7	14 12 -2
South Central	1978 1981 Up/Down	386 225 -161	49 24 -25	107 38 -69	28 36 +8	8 10 +2	13 15 +2	38 32 -6	12 8 -4	131 62 -69
East China	1978 1981 Up/Down	353 301 -52	40 37 -3	92 39 -53	33 39 +6	8 8 -	23 25 +2	51 42 -9	11 13 +2	95 98 +3
North China	1978 1981 Up/Down	225 177 -48	16 11 -5	94 51 -43	20 31 +11	6 4 -2	4 5 +1	38 32 -6	8 6 -2	39 37 -2
Northeast	1978 1981 Up/Down	238 205 -33	21 13 -8	47 15 -32	56 69 +13	10 13 +3	13 14 +1	21 13 -8	3 2 -1	67 66 -1

Note: Not including the cities of Beijing, Tianjin and Shanghai

Up to the end of 1980, the grand total of investments for capital construction in local medium and small-scale iron and steel enterprises throughout the country was 17.63 billion yuan, creating fixed assets of an original value of 11.76 billion yuan. In the overall value of investments and fixed assets of the entire iron and steel industry throughout the country, these figures constitute 30 and 36 percent, respectively. The following items were constructed: 660 blast furnaces of 28,400 cubic meter volume, 181 converters of 872 ton capacity, 285 electric furnaces of 743 ton capacity, 144 coke ovens, 55 sintering installations covering 1,260 square meters and 428 steel rolling mills. For details, see the following table:

Main Installations in Medium and Small-Scale Iron and Steel Enterprises
Enterprises Throughout the Country as of 1980

Type of Installation		Units	Totals	Types of Enterprises	
				Medium	Small
1. Blast Furnaces:	No.	No.	679	75	604
	Vol.	10,000m3	2.9	1.4	1.5
2. Open-Hearth F.	No.	No.	2	2	-
	Capacity	ton	53	53	-
	Area	m2	34	34	-
3. Electric Furn.	No.	No.	382	80	302
	Capacity	ton	969	331	638
	Load	10,000 KVA	64.5	20	44.5
4. Converters	No.	No.	136	82	54
	Capacity	ton	796	625	171
5. Steel Rolling Mills	No.	No.	511	130	381
6. Sintering Install.	No.	No.	58	43	46
	Area	m2	1,340	1,003	337
7. Coke Ovens	No.	No.	137	49	88
	Openings	No.	3,426		

II. Output Over the Years and Its Role in the Development of the National Economy

Since 1958 there has been a large increase in the main products from our local medium and small-scale iron and steel enterprises. Steel increased 179 times from 36,000 tons in 1957 to 6.489 million tons in 1980. Pig iron increased 14.6 times from 651,000 tons in 1957 to 10.188 million tons in 1980. Steel products increased 69 times from 123,000 tons in 1957 to 8.641 million tons in 1980. Iron ore increased 6.8 times from 3.54 million tons in 1957 to

27.58 million tons in 1980. Engine coke increased 95 times from 99,000 tons in 1957 to 9.529 million tons in 1980. The proportions of output from the local medium and small-scale iron and steel enterprises in the total national output are as follows: steel increased from 0.7 percent in 1957 to 17.5 percent in 1980; iron increased from 12.1 percent in 1957 to 26.8 percent in 1980; steel products increased from 1.8 percent in 1957 to 31.8 percent in 1980; iron ore increased from 18.3 percent in 1957 to 24.5 in 1980; engine coke increased from 1.8 percent in 1957 to 30 percent in 1980. The products of the local iron and steel enterprises have already become one of the major sources for materials used for production and construction in the various localities.

In the 31 years from 1949 to 1980, output of major products from the local medium and small-scale iron and steel enterprises were: steel, total output 41.676 million tons, or 9.6 percent of the total national output; iron, total output 120 million tons, or 26.1 percent of the total national output; steel products, total output 59.462 million tons, or 19.5 percent of the total national output; iron ore, total output 500 million tons, or 29.9 percent of the total national output; engine coke, total output 68.152 million tons, or 8.9 percent of the total national output. For details, see the following table:

Major Products Produced by Local Medium and Small-Scale Iron and Steel Enterprises as Proportion of National Output

(In 10,000 tons)

Years	Steel	Pig Iron	Steel Products	Engine Coke	Iron Ore
1957 National Output	535.0	539.6	436.4	555.4	1,937
By Medium/Small E.	3.6	65.1	12.3	9.9	354
% by M/S Enterpr.	0.7	12.1	1.8	1.8	18.3
1960 National Output	1,866.2	2,716.1	1,175.0	1,610.0	11,279
By Medium/Small E.	151.8	1,292.1	132.5	48.0	5,968
% by M/S Enterpr.	8.1	47.5	11.3	3.0	52.9
1962 National Output	667.2	805.1	468.5	1,010.1	2,578
By Medium/Small E.	12.5	111.1	33.1	26.8	427
% by M/S Enterpr.	1.9	13.8	7.1	2.6	16.5
1975 National Output	2,390.3	2,449.0	1,621.7	2,738.6	9,694
By Medium/Small E.	274.2	663.6	386.7	617.4	2,394
% by M/S Enterpr.	11.5	27.1	23.8	22.5	24.7
1980 National Output	3,712.1	3,802.4	2,715.8	3,404.8	11,258
By Medium/Small E.	648.9	1,018.8	864.1	952.9	2,758
% by M/S Enterpr.	17.5	26.8	31.8	30.3	24.5
1949-1980					
National Output	43,337	46,829	30,495	76,793	168,900
By Medium/Small E.	4,167.6	12,211.3	5,946.2	6,815.2	50,538
% by M/S Enterpr.	9.6	26.1	19.5	18.9	29.9

Since the local medium and small-scale steel and iron enterprises have the advantage of using local resources, of producing locally and consuming locally, they are palying an ever increasing role in the support of agriculture and industry and in market activities and the livelihood of the people. From the structure of sources of supply and consumption of steel products used in production and construction during the two years, 1978 and 1979, in Zhejiang Province we can see the role that the medium and small-scale iron and steel enterprises are playing. During the said two years, local sources for steel products accounted for 48.3 and 43.5 percent, respectively, of their total steel product supplies. State allocations accounted for only 51.7 and 56.5 percent. During the said two years the steel products used in the four areas of agriculture and agricultural machinery, light industry markets, capital construction, metal goods and packaging accounted for 53.9 and 52.7 percent of the total consumption. For details, see the following table:

Sources of Supply and Consumption of Steel Products in Zhejiang Province
for Two Years

(in 10,000 tons)

Sources and Consumption of Steel Products	1978	1979
1. From All Sources of Supply	42.2	47.8
From State Allocations	21.8	27.0
From Local Sources	20.4	20.8
% from Local Sources	48.3	43.5
2. Total Consumption	42.2	47.8
Consumed in Agr. & Agr. Machines	9.96	11.83
In Light Industry Markets	2.91	4.34
In Capital Construction	6.19	5.30
For Metal Products and Packaging	3.69	3.74
Subtotal	22.75	25.21
% of Subtotal in Total	53.9	52.7

In the last few years, the local medium and small-scale iron and steel enterprises have also made great efforts in the development of products for agriculture, the light industry market and of other "short line" products. The Echeng Iron and Steel Works were producing over 190 types of steel products in 1978 and among them over 70 for agricultural production: in 1979 they added steel products for furniture and bicycles, urgently needed in the market. The Qingdao Steel Works produced "striped" steel rods, thereby solving a number of problems in repairing and reconditioning the thousands of tractors throughout their province. The Jiangxi Steel Works developed their steel grades in the last few years from a few scores to 200 types and the standards of steel products from a little over 1,000 to 3,864. Their successful trial

production of piano wire reduced our country's imports and saved foreign exchange. The steel for motor vehicle "front beams," wheel rims and for tractors which they produce spurred on the manufacture of complete sets of agricultural machinery in the province. The Hangzhou Iron and Steel Works met the demands of production and construction in their province by producing steel for the marine industry, for the chemical fertilizer industry and for silicon steel; they also manufactured steel pipes and silicon steel sheets for the chemical fertilizer industry. The Nanjing Yaojin Steel Rolling Mill produced large-size cold rolled steel, filling a blank that existed in our domestic production.

III. Great Changes Since the 3rd Plenum

Over a long period of time, since their large-scale development from 1958 on, the local medium and small-scale iron and steel enterprises incurred continuous losses. Only in 1980 they began to turn losses into gains, following the 1978 3rd Plenum of the 11th CPC Central Committee and the preliminary readjustments of the subsequent 2 years. The changes shown in the economic results during the last 22 years may be roughly divided into four phases:

1958-1962, loss of 520 million yuan in 5 years, or an average annual loss of 104 million yuan;
1963-1967, loss of 640 million yuan in 5 years, or an average annual loss of 128 million yuan;
1968-1979, loss of 6 billion yuan in 12 years, or an average annual loss of 500 million yuan;
1980-1981, profit of 940 million yuan in 2 years, or an average annual profit of 470 million yuan.

That the local medium and small-scale iron and steel enterprises could for the first time turn losses into profit was the result of observing the policy of "3 years of readjustments." The second time of turning losses into profits (1980-1981) constituted a major victory for the shift in emphasis in the party's work following the 3d Plenum of the 11th CPC Central Committee and a major victory for the policy of "readjustments, restructuring, reorganization and upgrading." In 1977, one year before the 3d Plenum, the medium and small-scale iron and steel enterprises were still a "large deficit account" with a loss of 1 billion yuan, which was reduced to 610 million yuan in 1978, and again reduced in 1979 to 320 million yuan. Turning losses to profits started in 1980 with a profit of 450 million yuan. Although being affected by higher prices for raw and other materials and by other unfavorable factors in 1981, they were still able to achieve a profit of 400 million yuan. The trend of continuing profits was also maintained in 1982 (all above figures do not take taxes into account). In the above group, the shift from losses to profits was particularly rapid among the medium-scale enterprises, who also showed particularly favorable economic results. In the total losses of 610 million yuan incurred by the medium and small-scale iron and steel enterprises in 1978, the share of losses of the medium-scale enterprises was 120 million yuan, or 19.6 percent of the overall total losses, which means that over 80 percent of the losses were due to the small-scale enterprises. In 1980, when the medium and small-scale enterprises achieved an offset of losses by profits and had a profit of 450 million yuan, the profit share of

the medium-scale enterprises was 410 million yuan, or 91.1 percent, while the small-scale enterprises had a profit of only 40 million yuan. In 1981, when the medium and small-scale enterprises achieved an offset of losses by profits and had a profit of 400 million yuan, the profit share of the medium-scale enterprises was 430 million yuan, or 104.8 percent, while the small-scale enterprises could not cope with the onrush of price increases for raw and other materials and again incurred a loss of over 30 million yuan, relying on the profits from the medium-scale enterprises to wipe out the losses. For details, see the following table:

Profits and Losses in Recent Years of
Local Medium and Small-Scale Iron and Steel Enterprises
(In 100 million)

Years	Total		Share of the Medium-Scale Enterprises		Percentage of the Share of Medium-Scale Enterprises in the Totals	
	Profits	Taxes	Profits	Taxes	Profits	Taxes
1978	-6.1	4.3	-1.2	2.0	19.6	46.5
1979	-3.2	4.9	0.1	2.2	3.1	44.9
1980	4.5	5.1	4.1	2.3	91.1	45.1
1981	4.0	4.8	4.3	2.9	104.8	60.4

Turning losses into profits was mainly achieved by the local medium and small-scale iron and steel enterprises by lowering consumption, raising quality and developing short line products.

Consumption was greatly reduced. By 1981, the ratio of steelmaking coke in the local key enterprises had been reduced from 763 kilos in 1978 to 649 kilos, i.e. by 15 percent; the ratio of coke in small blast furnaces from 950 to 690 kilos, or 27 percent. The consumption of iron and steel material per ton of steel at top-blown converters was reduced from 1,284 kilos to 1,203 kilos, or by 6.5 percent; the comparative energy consumption of standard coal per ton of steel was reduced from 2.32 tons to 1.499 tons, a reduction of 35 percent. In the 4 years from 1978 to 1981, the output of steel was increased from 4.19 million to 6.27 million tons, an increase of 50 percent, while the overall consumption of energy was reduced from 25.77 million to 21.35 million tons of standard coal, a reduction of 17 percent.

There was a general improvement in quality. By 1981, the ratio of pig iron that was up to standards was raised from 97.27 percent in 1978 to 99.67 percent. The ratio of steel that was up to standards from top-blown converters was raised from 94.39 percent to 99.67 percent. The ore concentrate from the Jinling Iron Mine in Shandong and the threaded steel from the Lianyuan Steelworks in Hunan received the state's silver medals as reward for metal quality. Thirty-four items produced by local medium and small-scale iron and

steel plants, such as steelplate springs, spring steel wire, high quality band steel, high quality seamless tubes, round steel bars and cast iron, were designated as excellent quality goods by the Ministry of Metallurgy or by the provinces. Products from medium and small-scale iron and steel works were, furthermore, exported to 11 different countries.

Short-line products increases were fast. In the last few years, the medium and small-scale iron and steel works fully benefitted being "small boats that can easily be shifted around"; they effected prompt readjustments of their product structures and organized their production according to the needs of the consumers. Eighty percent or more of their production are made up of 6 short-line articles urgently needed in the markets and these account for a large proportion within the total national output. For instance: the medium and small iron and steel works produced 2.53 million tons of wire material in 1981, which accounted for 54.7 percent of the total national output; they produced 3.23 million tons of small shapes and materials, which accounted for 51.8 percent of the total national output; they produced 590,000 tons of welded pipes, which accounted for 46 percent of the total national output.

Consumption declined, quality improved, production of short-line products that are seriously in short supply and easily marketable was increased, costs declined correspondingly and profits went up correspondingly.

IV. Presently Existing Major Problems

In the last 2 years, a number of advanced enterprises have emerged among the local medium and small-scale iron and steel enterprises. For instance, the Hangzhou Iron and Steel Works has raised its various technological and economic norms very fast. In 1981, the said steelworks produced 300,000 tons of steel, made a profit of 48 million yuan, achieved a rate of profit per investment of 20.63 percent also achieved the most advanced national level of iron and steel enterprises. The small blast furnaces in the three provinces of Jiangsu, Hubei and Liaoning produce at an average coke ratio of less than 500 kilos, close to the 540 kilo level of key iron and steel enterprises. However, developments are uneven, and in 1981 there were still 434 enterprises that operated at a loss. They accounted for 40 percent of all the local medium and small-scale iron and steel enterprises (15 of them were medium-scale enterprises, making up 19 percent of the total medium-scale enterprises), running up a deficit of 345 million yuan, which greatly affected the average economic results of all the medium and small-scale enterprises taken together. The main problems experienced by these deficit enterprises are:

(1) Backward management, too high consumption and costs: In 1981, the energy consumption ratio per ton of steel at the local medium-scale enterprises was an average of 1,499 kilos of standard coal, which is 448 kilos more than at the Hangzhou Steelworks. The coke ratio for iron-smelting was an average of 649 kilos, which is 107 kilos more than the 542 kilo ratio at the Jinan Ironworks. The consumption of iron material at the top-blown converters was on the average 1,203 kilos per ton of steel, which is 82 kilos more than

the 1,121 kilo ratio at the Hangzhou Steelworks. The cost of one ton of steel was an average of around 310 yuan, or about 40 yuan more than the 265 yuan of Hangzhou Steelworks and the 263 yuan of the Lianshui Steelworks.

(2) Backward techniques and technologies: The production techniques of our medium and small-scale iron and steel enterprises were basically reductions in size of the large-scale steelworks designed with Soviet Russian assistance in the 1950's. There were none of the special features needed for medium and small-scale enterprises, such as specialization, high efficiency, close coordination of equipment to form complete sets of production facilities. Equipment was of uneven capacity, as if having a strong horse pulling a little wagon. Some enterprises still use the side-blown converters and do not have adequate means of testing or control equipment. Consumption is therefore high, quality is unsatisfactory and the actual metal yield low.

(3) Equipment not forming complete sets: Some enterprises were started in the year of the "great leap forward," and after construction was halted in the 1960's, they were left without a complete production capacity. Their iron-smelting and rolling mill capabilities were usually greater than their steelmaking capabilities; out of an 8.5 million steelmaking capability about 2 million ton capacities cannot be effectively utilized. For instance, at the Laiwu Steelworks in Shandong, a certain iron-smelting and steel rolling capacity had been created with an investment of 400 million yuan, but their three 25-ton converters were never finished, so that they now "wish iron could turn into steel at once"; theirs is still a deficit operation.

V. Some Measures That Require Continued Earnest Attention

In the last few years, the local medium and small-scale iron and steel enterprises have achieved preliminary successes by conscientiously implementing the "eight character policy" under the guidance of the Ministry of Metallurgical Industry and the metallurgical departments in the provinces, municipalities and autonomous regions. However, in order to have the local medium and small-scale iron and steel enterprises, especially the small-scale enterprises, take on a fundamentally new look, and to have them meet the needs for a vigorous development of the economy, as put forward at the 12th CPC National Congress, it is still necessary, emulating the action of the Ministry of Chemical Industry in the case of the small nitrogen fertilizer factories, to continue in the latter 3 years of the Sixth Five-Year Plan to give special and thorough attention to the following measures:

First, carry out the economic responsibility system and make it ever more perfect. In recent years, the system of own responsibility for profits and losses has been generally carried out, thereby changing the past condition when "profits were turned over to higher authority, losses reported and reimbursed and needed cash demanded from higher up." The change imposed a certain pressure on the enterprises, but also opened up prospects for them. The economic responsibility system was also carried out at every internal level of the enterprises and this aroused the enthusiasm of the vast number of staff and workers. Generally speaking, it is still necessary to further adapt to the new situation and continue to develop and perfect the economic

responsibility system. For instance, in assuming the economic responsibility toward the state, it is necessary to actively carry out the shift from profit-delivery to the system of taxation. In the internal application of the economic responsibility system within the enterprises, it is necessary to perfect it in a combined action with reorganization.

Second, carry out rational readjustments of small blast furnaces. The original 628 furnaces of 12,000 m³ volume have now been readjusted to 282 furnaces of 7,200 m³ volume, retaining an annual output capacity of about 3 million tons. The small blast furnaces that have been retained show marked improvements in economic results through the general strengthening of management and through continuous technological transformations. The average coke ratio of the 53 small blast furnaces retained in the eight provinces of Jiangsu, Shandong, Henan, Hubei, Zhejiang, Liaoning, Jilin and Heilongjiang, is below 600 kilos. Due to readjustments, the cost of pig iron produced in small blast furnaces throughout the country was reduced from 303 yuan per ton in 1978 to 244 yuan in 1981. The ratio of up-to-standard pig iron was raised from 90.8 percent in 1978 to 97.5 percent in 1981, converted into the coke ratio, there was a reduction from 950 kilo in 1978 to 690 kilo in 1981, which means a saving of 16.75 million tons of coke in 3 years. The net losses of small ironworks throughout the country were reduced from 630 million yuan in 1978 to 107 million yuan in 1981. However, among the 140 small ironworks that were retained, only 21 operated at profit in 1981; over 40 of them, moreover, still are short of ore or coal, and further readjustments are needed in accordance with needs and possibilities.

Third, further reorganizations of enterprises, strengthening of business management. Following the 3d Plenum, initial reorganizations have generally been carried out in the local medium and small-scale iron and steel enterprises. The cost per ton of converter steel produced by medium-scale iron and steel works in 1981 is down to 310 yuan from 381 yuan in 1978, a reduction of 18 percent. The cost of electric furnace steel per ton was reduced from 350 yuan to 319 yuan, a reduction of 8.8 percent. The cost per ton of small shapes was reduced to 441 yuan from 455 yuan, a reduction of 3 percent. However, measured against the demands set forth by the central authorities for the readjustment of enterprises, there is here still a fairly large discrepancy and continued attention must still be paid to the leading groups, to the staff and labor force and toward building up the "three basics" and the "three items to be perfected."

Fourth, continuous attention to technological transformations. In the last few years, the local medium and small-scale enterprises have carried out over 350 technological transformations in such lines as steelmaking, economies in energy consumption, in measuring, testing, environmental protection, etc., achieving very good results. However, the technological transformations have not been carried out in sufficient breadth, not comprehensively enough and not to latest advanced levels. In general, technological levels are still very low. In future, developments toward higher efficiency, lower consumption and greater specialization still require further close attention to the planning and improvement of technological transformations as the only way to provide the conditions for long-term coexistence with the large enterprises.

Fifth, appropriate filling of gaps and raising the comprehensive production capacity. In the last few years, several districts used capital which they had raised themselves and aiming to ensure the continuity of their construction, carried out the formation of complete sets of production installations with certain points of emphasis, thereby achieving remarkable improvements in economic results. Before 1978, the Hangzhou Steelworks found itself with an inadequate steelmaking capacity in relation to its iron-smelting and steel rolling capacity, thereby incurring losses over a long period of time. In 1978 they themselves raised capital and built a 5-ton converter, by which action they transformed their deficit into surplus that very same year. In 1981, their profit was 48 million yuan. The medium and small-scale iron and steel enterprises throughout the country have now steelmaking equipment with a total capacity of about 8.5 million tons, but actually produced 6.3 million tons of steel, leaving a capacity of about 2 million tons unused. According to preliminary statistics, 1 million of this capacity was created by bad management, the other 1 million was created by lack of coordinating various items of equipment to form complete sets. Moreover, in the 1970's the state supported the establishment of a number of "small third line" independent steel rolling mills to undertake rolling jobs on semifinished products for the state. To raise their own economic results, the enterprises that used to contract out the semifinished products, in recent years stopped doing so, some even establishing their own small rolling mills and carrying out their own rolling and marketing. This adversely affected the "small third line" steel rolling mills and deprived them of making full use of their capacities. All these problems have to be ironed out during the readjustments or to be resolved by instituting joint business operations.

Sixth, economic policies that hinder the development of production and technologies in the local medium and small-scale iron and steel enterprises must be changed as quickly as possible. The "free supply system" employed in the past for local medium and small-scale enterprises was a system according to which products were to be supplied or sold at fixed prices, the state taking up any profits or losses and any resulting deficits to be made up by reimbursements from the state. This system played a certain positive role in the past, but also had the negative effect of enterprises not keeping account of costs and paying no attention to economic results, placing a large burden on the state finances. Since the deficits of the small iron and steel enterprises were made up by reimbursements from the state, the larger such reimbursements could be inflated the more profitable for the locality concerned, so that some places regarded the small iron and steel enterprises as a kind of "money-sprouting trees," and loaded additional personnel and extraneous expenses on to the small iron and steel works and supplying their products at unduly low prices. This made it impossible for the enterprises to lower their costs and it engendered a sense of dependence in the enterprises so that they would not actively seek measures to reduce their costs. These factors were the reason why many enterprises for long period of time could not turn their losses into profits. In this respect it is necessary to gradually and according to the actual conditions institute a new policy instead. For instance, abolish the reimbursements for losses and have floating prices for the products of the local iron and steel enterprises,

and allow the small iron and steel enterprises to retain their profits for a certain number of years to be used by them for technological transformations.

In summary, the medium and small-scale iron and steel enterprises have already become an indispensable force in our national economy, on the one hand, not to be eliminated and on the other hand not to be allowed to develop irrationally, but rather to be consolidated and improved in a thorough implementation of the "eight character policy."

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SURVEY OF BEIJING'S TOWN AND TOWNSHIP COLLECTIVE ECONOMY

Beijing JINGJI DIAOCHA [ECONOMIC SURVEY] in Chinese No 2, 1984 pp 41-46

[Article by Shi Ying [1395 5391]: "Significance of Beijing's Town and Township Collective Economy and Ways of Strengthening It"]

[Text] The Economic Construction Group, Industry and Commerce Group of the Chinese People's Political Consultative Conference

The economic construction group and the industry and commerce group of the Chinese People's Political Consultative Conference conducted a survey on the town and township collective economy in the Beijing municipality from late March through early May. Incidentally, they also obtained an understanding of the issues relating to the individual economy. Details are discussed below.

The Development of Town and Township Collective Economy in Beijing

Since the 3d Plenary Session of the 11th Central Committee, the Central Committee and the State Council have issued a series of instructions concerning ways to increase employment and the development of the town and township collective economy. At the time, youth employment was a glaring problem. In 1979, Beijing had 400,000 young people waiting for jobs, and they were joined annually by 100,000 more. In Chonguen District, there was one such youth in every three households. How to find jobs for them was a problem that concerned many people and directly affected social stability. Furthermore, the dislocation in the socioeconomic structure between service trades, on the one hand and light industries, handicrafts and heavy industries, on the other, had created major problems for people who wanted to shop, buy a meal, have clothing made or get lodging at a hotel. There was a large number of people who had no jobs. At the same time, there was working waiting to be done. It was against these circumstances that miscellaneous social forces were mobilized to setup a collective economy in the Beijing Municipality, in accordance with the spirit of the policies of the Central Committee.

Over the past three years, 6,032 enterprise network points have been created in Beijing, employing 323,800 people. Of these enterprises, light industries and handicrafts account for 1,447, or 24 percent of the total, and employ 147,000 people (45.3 percent of those employed); commercial, catering service; and repair network points account for 4,073 (67.5 percent), employing

81,400 people (25.1 percent); construction network points account for 318 (5.2 percent), employing 84,000 people (25.9 percent); and labor service networks points account for 194 (3.2 percent), employing 11,400 people (3.5 percent).

These collective enterprises can be divided into three systems:

1. Producers' service co-operative. This system has developed gradually since early 1979 on the basis of neighborhood producers' groups. Beginning in August of the same year, a municipality-wide producers' service co-operative came into existence, together with a federation of producers' co-operatives in districts and neighborhoods. Today, this system include 2,934 network points and employes 188,000 people. The development of new collective enterprises in districts and neighborhoods thereafter became part of this system.

2. Municipal, district and neighborhood labor service companies. Set up by labor departments at various levels in August 1980, this system now has 486 enterprises and employs 31,000 people. In the future, this system will stress the management and training of social labor forces and the development of labor service organizations.

3. Collective enterprises established by various departments, the armed forces, factories, mines, enterprises and institutions to provide jobs for the children of their staff and workers, in accordance with the spirit of the party Central Committee, the Beijing Municipal Party Committee and the Beijing Municipal People's Government. Because these units enjoy some advantages in terms of human, financial and material resources and in managerial methods, this system has developed most rapidly, with 2,512 network points and more than 155,000 employees. Since 1982, the municipal party committee and the municipal government have decided that the Municipal Labor Service Company should establish closer ties with collective enterprises in this system and provide them with a certain amount of guidance. So far, however, the only guidance has been in the area of employment.

Town and Township Collective Economy Shaping up as Important, Integral Part of Socialist Urban Economy

The main characteristics of a collective economy are that it is widely dispersed, multi-faceted and versatile, that it needs little investment and produces quick results, and that it is suited to the development level of China's productive forces. From our study, we noticed that developing the town and township collective economy has the following eight advantages:

1. It opens up new and important opportunities for employment. From 1979 through 1982, Beijing's town and township collective economy found jobs for 202,000 young people who had been awaiting employment. This figure represented 25.6 percent of the entire jobless youth population of 753,999. Since 1981, the collective economy has helped the municipality provide a job for every young newcomer to the labor force.

2. It creates a broad network of points where consumers are directly served, making things convenient for the public. At present, the number of

commercial, catering, service and repair points in the municipal collective economy which provide direct service to the public has reached 35.5 percent of the total number of corresponding operations in the state-operated sector. Its employment has also increased to about 37.5 percent of the total employment in corresponding enterprises in the state-operated sector. Total sales climbed to about 700 million yuan in 1982, roughly 10 percent of the value of retail sales in social commodities for the entire municipality. Of the light industrial and handicrafts enterprises in the collective economy, a majority specializes in the production of articles of daily consumption. Neighborhood factories in Chongwen District make children's wear, women's wear, bags and luggage and spring beds, among other things, which are sold in all major department stores and have proved very popular among consumers. It should be pointed out that some collective economic units have contracted with a number of factory units to take over from them the operation of their cafeterias, bathrooms and day-care centers, improving the quality of service, turning losses into profits, as well as reducing the burden on the factories. In addition, some localities are experimenting with collective organizations which specialize in providing services to meet the daily needs of their staff and workers. The collective economy promises to contribute much to the promotion of the socialization of staff welfare and household labor. Beijing's experience in this area should be given due attention and vigorously popularized.

3. It develops labor-intensive manufacturing enterprises. The collective economy is suited to certain operations and products which do not need modern technical equipment and mass production techniques and which cannot be accommodated in the state-operated sector of the economy. At present, collective industries and handicrafts enterprises in the entire municipality turn out more than 3,000 lines of products, including about 300 small articles of daily use and arts and crafts products whose production had been suspended, and over 100 new products which are in short supply. Taking up only a little over 10 single-story houses, the Fenghuang Woollen Knitwear Factory in Chongwen District has yet managed to organize over 1,600 workers in dispersed production, exporting more than 100,000 hand-knit woollen sweaters over the past 2 years. Its merchandise has been tested by, and certified as meeting the standards of the International Wool Secretariat which has issued the factory a special permit.

4. It fills up service gaps and satisfies urgent social needs. During the ten years of turmoil, the consignment industry was regarded as "middleman's exploitation" and was almost completely wiped out. Consequently, small and medium-sized factories and scientific research units, as well as foreign buyers and local residents, were greatly inconvenienced in packing, shipping and collecting of their goods. Another result was large waste of manpower, transport and other resources. The collective economy has now revived this trade. One consignment station in the Chongwen District alone consigns and delivers 30,000 batches of goods each year, establishing a regular business relationship with more than 300 industrial and commercial units. The restoration of ancient buildings in the capital is a huge task, for which resources have been amazingly lacking. Working under contract, the ancient buildings restoration team organized by Chongwen District has now

completed work on the old observatory and other renovations jobs. Its work has been of high quality, and it has recently been swamped with contract offers from other parts of the country.

5. It disseminates specialized engineering techniques. Electricity supply departments require consumers to install their own wiring and other internal fixtures. Owing to a shortage of materials, as many as 1,000 to 2,000 new or expanding factories and mines often have to go without electricity for a while. After the municipal electricity supply department set up a labor service company, it formed a trained corps composed of the children of its staff and workers which completed over 2,500 electrical jobs at electricity-consuming enterprises within two years. The labor service company organized by the Chinese Academy of Sciences Computing Center can take up a variety of computing jobs and provide computer checking and repair services.

6. It is free from bureaucratism. Chongwen District has organized a neighborhood factory to make handicraft articles such as cloisonne, ivory carvings and jade carvings. The factory goes out of its way to satisfy market and customer needs. Should a foreign businessman so request, it can come up with sample products and negotiate a deal in a little over ten days. Nor is it discouraged by small orders. On one occasion, a foreign delegation did not have time to go shopping during the day. As soon as it heard of this, the Yanjing Painting and Calligraphy Company in Chongwen District sent a variety of arts and crafts products to the hotel and put up a sales exhibit that very night, netting orders worth more than 300,000 yuan. Because of their simple procedures and quick access to information, many collective warehouses are much faster than their state-operated counterparts in replenishing their stocks and in putting goods on the market.

7. It taps potential social talent and trains a variety of experts. Retired workers and veteran craftsmen scattered throughout society are the professional and technical mainstays that started up the collective economy. Many collective enterprises depend on them, including some members of the associations of civilian construction work and industry and commerce, to put elaborate plans into operation. They pass on their experience and expertise to the young workers and let them gradually assume important responsibility. Elderly workers enthusiastically passing on their skills, young employees trying hard to learn and improve themselves and an upbeat atmosphere--this is the inspiring sight observable at all the better-managed collective enterprises. The significance of this is that the development of collective enterprises depends on the important task of training manpower.

8. It makes use of all conditions to create social and economic results. The collective enterprises suffer less from a mentality of relying on others and adhering rigidly to rules and regulations. This is because they make do with whatever is available and work hard when they run into difficulties. We are greatly impressed by the 10 or so hotels and the 1,000-seat movie theater that Chongwen District has created from the civil air defense shelters. Over the past 3 years, collective enterprises in the municipality secured bank loans totalling more than 290 million yuan, of which 95 percent have been repaid. Their accumulated funds now exceed 300 million yuan, and their savings top 200 million yuan.

Facts show that the collective economy offers many advantages and is full of vitality. It is an important part of the socialist economy. Given the present situation, however, Beijing's town and township collective economy is still far from capable of satisfying society's various needs, which are increasing day by day. The municipality's superiority in science and technology and traditional handicrafts and its potential for labor-intensive manufacturing on an extensive scale are yet to be utilized. There is still a dire lack of new repair and service enterprises and labor organizations which are needed to keep pace with the people's ever-rising standard of living. Commercial, catering, repair and service network points, as well as small and medium-sized networks, are urgently needed in newly developed residential areas, along main traffic arteries and in a great many remote and out-of-the-way streets and lanes.

The State Council recently issued the "Provisional Regulations Concerning Some Policy Issues Pertaining to the Town and Township Collective Ownership Economy," reiterating and further clarifying the policies and principles governing the development of that economy. The "Regulations" are well suited to the actual circumstances of the municipality and are very important as a spur to the further development of the collective economy. From what we saw in our survey, we think the following issues need to be examined and resolved:

Ideological Resistance in Various Departments Must Be Further Reduced

We noticed that as the collective economy took off, many young people and their parents began to discard their reluctance to work in a collective enterprise and their mental blocks about it decreased. This was not easy for them to do. But cadres in various departments still lack an adequate understanding of the significance of developing the collective economy, and so they are less than cooperative in daily operations. Running a collective economic enterprise involves various transactions which require the investigation, approval and support of numerous departments--industry and commerce, finance and taxation, banking, materials, pricing, urban planning, urban administration, grain and oil, the carrying trade and even such departments as education, public health, parks, greening, urban aesthetics and traffic. Should these departments stick to the rule-book mechanically, make every excuse to pass the buck, or wrangle over trifles, instead of sympathizing with the difficulties of a collective enterprise and adopting a positive problem-solving and supportive attitude, it will be very hard to set up such an enterprise. Even when the enterprise is created, it will suffer from many restrictions, frustrations, and will be unable to operate and develop freely. Cadres at the basis level have told us of many real examples:

There are problems with factory sites, namely, a serious lack of factory space. The most basic facilities are lacking, not to mention essential welfare facilities. The 45 collective network points subordinate to the labor service company in Chongwen District are on temporary sites, operating out of temporary sheds; there are no permanent buildings. They could be ordered to dismantle at any time, and they would then be without a place. Although municipal neighborhood regulations require that seven percent of the buildings

in new residential districts be reserved for commercial and service purposes. In actual practice, however, collective network points are not allocated such space. This is either because the unit which puts up the buildings fails to repay its debts or because all available space is allocated to state-run units. There was a 10,000-square meter empty lot to the west of the front gate in a booming part of town that was a suitable place for developing a commercial network point. The municipal government had expressly allocated the site to Chongwen District for the construction of a collective market. But the unit which had been temporarily occupying the lot suddenly put up temporary housing there and workers moved in the families of their staff. A medium-sized commercial center could have been built on the relatively large empty lot on the two sides of Yongnai Main Street to the east of the Yongdingmen Station. Arguing that the building of shops in that area would greatly increase the number of pedestrians crossing the street and cause more accidents, the Department of Traffic only allowed temporary plank structures to be built on the site.

The various kinds of raw, processed and supplementary materials needed by collective enterprises are often not included in the plans of the Building materials Department. Thus enterprises are not assured of a source of supply in the centralized allocation of materials.

As for areas of operation, departments in charge do not allow collective enterprises to operate in certain trades. In some cases regulations are overly restrictive. For example, labor insurance articles used by state-operated factories and mines could be produced up to standard and on time by their own service companies under the supervision of the security departments in the factories and mines. To cite another example, the Yanjing Painting and Calligraphy Company informed us that the salvaging, protection and rational utilization of cultural relics would be facilitated if cultural relics departments tested the skills of those workers in collective enterprises who are experienced in relics appraisal, and gave them purchasing responsibilities. As it is, with these understaffed departments running a monopolistic operation, materials kept in stock tend to deteriorate or become scattered and lost. Some are even smuggled out of the country.

As for the appraisal and fixing of prices, the commerce department determines the prices of goods purchased by collective enterprises from outside areas. This is necessary. But according to cadres at the basic level, there is often a 20- to 30-day delay before the department comes up with a price on some seasonal merchandize. The approved retail price of some popular merchandise is lower than that of an identical article in a state-run shop. Those goods which are selling poorly are ironically priced higher. Yanjing Painting and Calligraphy Company bought some fox shawls from the foreign trade department. In selling these shawls to foreign visitors, the company was required to charge a uniform price regardless of the difference in sizes.

"Too many do's and don't's"--that sums up the comment by cadres at the basic level. It is the Central Committee's policy that the various departments concerned treat collectively-owned units in the same way that they treat state-operated units, politically and economically. But this policy has not

been enforced. We believe that cadres must first be further educated to be rid of "leftist" ideological influences. All departments must earnestly carry out the "Regulations" recently promulgated by the State Council. They must facilitate the development of the collective economy by removing restrictions and granting permissions, (of course, controls should remain where they are justified). They should strengthen publicity in the newspapers, not only to explain positively the significance of developing the collective economy, but also to point out explicitly where resistance to this development is coming from and how it should be handled. Within collective enterprises, cadres must be instructed in both the correct understanding of the characteristics and laws of the collective economy and the rectification of their management thinking. Only by improving the understanding of all aspects can we really promote the collective economy and help it improve its management and its personnel training so that it can develop even more vigorously.

2. Strengthen the Leadership and Management of the Town and Township Collective Economy

Considering the issues raised in the study, we believe it is also necessary for government at all levels to strengthen its unified leadership and management of the collective economy. First, government should /increase the powers of the leading groups in the collective economy of the municipality's towns and townships./ In April 1982, the Beijing Municipal Party Committee and the Beijing Municipal People's Government set up a leading group to take charge of the development of the town and township collective economy and earnestly carry out the various directives issued by the party Central Committee. This group has done a large amount of innovative organizational work and thus proved its importance. Comprised of responsible cadres from all departments concerned with developing the collective economy, the leading group should be a powerful body. But our understanding is that when the group fails to reach a consensus on a major issue, it sometimes has difficulty coming up with a resolution. Even when a resolution is adopted, the group's subordinates continue to pursue different courses of action, and the resolution cannot be carried out. We propose that the problem-solving powers of the leading group be enhanced and that it be given the final say on divisive issues. All departments must strictly enforce its decisions. No resistance should be tolerated.

Furthermore, /the working body of this group should be beefed up./ At present, the office under the leading group is expressly a functional organ of the municipal government. Its duty is to do the day-to-day work of developing the collective economy, taking orders directly from the leading group. We think this organizational structure is appropriate. The problem now is that this office has no regular personnel. Most of its cadres are borrowed and assigned temporarily. Nor are there enough of them to handle the actual workload. People at lower levels have been unanimously appealing for the strengthening of the offices of the collective economy at both the municipal and district levels, with a regular complement of full-time workers so that they form a competent and efficient organization. We support this demand totally.

/Here is our proposal to solve the problems of fragmented leadership at the center./ Not all inter-agency wranglings over the development of the collective economy in Beijing Municipality are due to differences between municipal departments. Some derive from conflicting regulations issued by the central departments that the municipality cannot reconcile. When this occurs, the municipal departments must obtain instructions from above, often from several agencies, without knowing exactly where to pinpoint responsibility, and have to put the project concerned on hold. The State Council "Regulations" have explicitly designated the State Economic Commission as the ultimately responsible body, putting it in charge of planning and coordination. Both we and the comrades in the municipality agree with this arrangement. We also suggest that an appropriate organization be set up in the Economic Commission, whose sole responsibility would be the development of the collective economy. With better vertical integration, problem-solving could be speeded up.

Related to the problem of leadership strengthening is /the issue of setting up an association for each trade in the town and township collective economy to exercise leadership over the enterprises in that trade./ The commercial and industrial departments would be too supervisory to enable trade associations to play their role of organizations fully. In our opinion, a more suitable approach would be to affiliate these associations with the federations of industry and commerce at various levels. As collective members of the federations, the associations would operate under the former's leadership. According to the State Council "Regulations," the duty of the associations is to promote the management and administration of the collective enterprises, the ideological education of the workers and staff members and the study of technology and business practices. They must also report actual conditions and make recommendations to the people's government. As a matter of fact, all these functions are those of the federations of industry and commerce. In the development of the collective economy, the federations have played a useful role in mobilizing organizations at all levels to provide collective enterprises with expertise, experience and industrial and commercial information. While conducting our survey in Beijing, we heard people from all sections speak highly of the federations. (Under the federations' leadership, the trade associations would participate in activities with them, and the federations would send experienced members to participate in the associations' work.) This fine arrangement would further enrich the work of the federations and enable them to play a bigger role in the "four modernizations."

3. The Principles of Town and Township Collective Ownership Must be Correctly Implemented

"Voluntary association; the assumption of sole responsibility for one's profits and losses; democratic management; distribution according to one's work; fund raising among staff and workers; proper sharing of bonuses; collective accumulation; self-government"--such are the principles underpinning the town and township collective economy as put forward by the State Council "Regulations." They are more explicit and perfect than those enumerated in Document No. 42 of 1981--"voluntary association; the assumption

of sole responsibility for one's profits and losses; democratic management; and distribution according to one's work." The aim is to ensure that the town and township collective economy will become a collective economy that really belongs to the masses. If we take the principles outlined in the "Regulations" as a yardstick, the town and township collective enterprises of Beijing Municipality fail the test in most respects. They basically remain "official" collectives that copy the old wages of state-operated enterprises in administration, management and distribution. Many cadres in collective enterprises are put there by neighborhood and office committees, or they work for both the committees and the enterprises. Therefore, the collective enterprises have failed to show their mass character in organizational matters and their democratic nature in operations and management. Since the federation of neighborhoods is in the neighborhoods--with the neighborhood party committee and the neighborhood office exercising direct administrative and business leadership--the neighborhood is the real "master" of the enterprise attached to it and takes its profits at will. Take, for instance, the production and service federation in the Donghuashi neighborhood in Chongwen District. From 1980 to 1982, it bore all the expenses of the neighborhood party committee and its office, which totalled 129,000 yuan, including cadre bonuses, equipment purchases, office renovations and subsidies for medical and office expenses. Some enterprises are even held responsible for expenses incurred when driver and car have to be dispatched by neighborhood offices on an unexpected mission and for the food expenses of security personnel.

This situation certainly has much to do with people's lack of experience when town and township collective enterprises were first set up and with the absence of concrete policies and regulations. Besides, finding employment then was a very serious and urgent problem. Nevertheless, the present state of affairs is also related to our failure to free ourselves from the leftist ideological straitjacket; everybody is comfortable with the old, familiar and easy ways. Objectively speaking, there was a need for the district, the neighborhood and other organizing units to exercise directly a considerable measure of control over a collective enterprise in the beginning. Otherwise, no substantial development would be possible. Now that the collective economy has taken shape, however, only by correctly implementing the principles in the "Regulations" can we fully develop the advantages and vitality of the collective economy. In the absence of such a move, the "driving force" behind the economy in its initial phase will become the "stumbling block" to its further progress.

The State Council "Regulations" have made it very clear that there need not be any change in the affiliations of the existing "official" collective enterprises. But the "Regulations" do demand vigorous readjustment and restructuring to ensure that collective enterprises become solely responsible for their profits and losses and that they gradually enlarge their autonomy in conducting economic affairs, thereby restoring the fine traditions of democratic management and hard work and thrift in running an enterprise. These "Regulations" are realistic and can be achieved, provided we have the will. First of all, we must try to separate administrative politics from

enterprises in the neighborhood. Afterwards, we must seriously tackle the problem of neighborhoods taking profits from an enterprise at will and apportioning to it an excessive amount of expenses. In this way, the problem of an enterprise assuming sole responsibility for its profits and losses and the issue of economic autonomy can be readily solved. On this point, we see eye to eye with the cadres in the municipality.

4. Unified Nationwide Planning for the Social Insurance of Town and Township Collective Economy

At present, district federations of producers' co-operatives in Beijing Municipality are collecting retirement reserve funds on an experimental basis from their attached enterprises. In addition, a very few enterprises are voluntarily putting aside a certain amount of money as their insurance funds. These practices comply with the spirit of the State Council "Regulations." For long-term considerations, however, we prefer that unified planning for social insurance of the town and township collective economy be done by an insurance company. This would provide the staff and workers of collective enterprises with a planning organization for social insurance and give full play to mutual social assistance on a larger scale, it would also be less costly and more efficient. Moreover, it would increase the confidence of the staff and workers in social insurance and make them more able to obtain insurance. We are only putting forward an idea here. Its implementation still requires much study. For example, social insurance covers a wide area. We have to decide which parts can be brought under unified planning and which cannot. Also, given the different age composition of the staff and workers of new and old collective enterprises, how are the insurance rates to be determined? At present, insurance companies have yet to begin operations in many county towns. Understaffed as they are, could they discharge this responsibility? We believe that unified national planning is the correct choice. We must work hard to create favorable conditions so that we can march towards that goal. We propose that the Chinese People's Insurance Company consider this idea carefully.

5. The Main Problem with Individual Economy Is Control

We can see that the Beijing Municipality has done much work in developing a town and township individual economy in accordance with the spirit of the directives of the Central Committee. As of March of this year, the municipality had 13,500 households that had obtained a permit to operate an individual business. They employed 16,500 people, of whom 7,740 were youths. There were individual laborers in handicrafts (654 households, or 4.8 percent of all households), catering (728, or 5.3 percent), repairing (2,405 or 17.5 percent), apparel processing (1,073 or 7.9 percent), services (679, or 11.9 percent) and house repair and renovation (130, or 0.95 percent). Many of them are elderly craftsmen or retired workers who have been engaged in individual operations since liberation. In addition, there are young people dedicated to serving society. As their service attitudes are good and their methods of operation flexible, they have been well received by people from all walks of life.

The critical problem in the individual economy is control. How are we to attract young people waiting for jobs to those trades which are urgently needed and which are suited to the supplementary role played by the individual economy? Moreover, how are we to organize and stabilize them in such trades? To do all this, we must come up with concrete measures for training labor, drawing apprentices to traditional crafts, managing sites and supplying raw and processed materials. Above all, we must strengthen market control. In Beijing Municipality there are 7,088 individual economic households (52 percent of the total) in merchandising. Of the individual households holding permits in Chongwen District, 43 percent sell fruits. Some (including quite a few without a permit) are young profiteers. They illegally buy up goods in short supply, hoard them and then re-sell them at inflated prices. Some even commit acts of physical violence, make trouble, bully people in the same trade and dominate the market. Departments administering commerce and industry, on the other hand, are weak and understaffed and do not have a sufficiently clear guiding ideology. For some time now, market control has lagged behind. This had drawn strong criticism from the public, which complains that the policy has been discredited, that social values have been corrupted, that consumers have been swindled and that the youths themselves have been destroyed. In response, the State Council has recently issued the "Supplementary Regulations to Certain Policy Regulations Regarding Town and Township Non-Agricultural Individual Economy." It has also provided more information on price controls and market control. The Beijing Municipality attaches a great deal of importance to this situation and is taking measures to resolve it.

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ASPECTS OF SICHUAN'S ECONOMIC DEVELOPMENT

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[Text]

I. Basic Situation

Sichuan is located in the interior of China. Its strategic position is extremely important. It meets the Qinghai-Xizang Plateau in the west, the Chang Jiang and Sanmen Gorge are to its east, the Qin Ling Mountain Range is to the north and the Yunnan-Guizhou Plateau is to the south. The terrain is rugged on all sides. The province spans more than 1,200 km from east to west and is over 900 km at its longest point from north to south. It occupies approximately 6 percent of the nation's land area, an area of 570,000 square km second only to Xinjiang, Tibet, Qinghai and Inner Mongolia.

Sichuan is one of our provinces that has many nationalities, the Yi, Zang, Tujia, Miao, Qiang, Hui, Mongolian, Lisu, Man, Naxi, Bouyei, Bai, Dai, Zhuang and other minority nationalities in addition to the Han. The population of minority nationalities is 3,661,277, or 3.71 percent of the province's total population of 99,713,310.

Sichuan is located among five of our major landforms, the Qinghai-Xizang Plateau, the Yunnan-Guizhou Plateau, the Qinba Mountains, the Hengduan Mountain Range and the western mountains of Hunan-Hubei. Natural conditions are diverse. One outstanding topographical feature is the high terrain. There are great rises and falls; about 82 percent of the area of the province is higher than 500 meters above sea level. Sichuan can be divided into four large areas according to landforms and various contributing factors. The four are the lower Sichuan basin, the mountainous area along the periphery of the Sichuan basin, the mountainous area in southwestern Sichuan and the plateau in the northwest.

Sichuan is one of our four large basins. The lower basin is a model agricultural area; the hills are extensive, the terrain is low, there is plenty of heat and rainfall is moderate and distributed unevenly over the seasons. The cultivated land area of the entire region is 77.3 million mu, or 77.3 percent of the entire cultivated land area of the province. One-half

of this is farmland. The multiple-crop index is quite high; grain crops absolutely predominate with rice most important, followed by wheat, corn and red trumpet creeper. The major cash crops are oil, cotton, hemp and sugarcane. Of these, rice, wheat, rapeseed, cotton, ramie and sugarcane yields can be about 85-90 percent of the entire province's. Pork livestock, buffalo, silkworm cocoons, honey, poultry and rabbit yields are 75-90 percent of the entire province's yield. Mulberry, orange and tangerine trees account for over 80 percent of the whole province's yield and tung oil trees for more than half. In particular the plateau in the western portion of the basin, namely the Chengdu plateau, is a commodity grain and oil base. It has an area of 8,000 square meters and is our largest plateau in the southwest. The terrain is smooth and the soil fertile. There is a profuse network of waterways and fields crisscrossed by paths.

Sichuan is in the subtropical zone. Various complex topographical influences cause noticeable differences in the climates of the eastern basin and western plateau areas.

The eastern basin area has a subtropical, humid climate. The temperature is high, there is a long frost-free period, the rainfall is plentiful, the humidity is high and there is little sunshine. The average temperature is usually between 16° and 18° . Along the banks of the Chang Jiang valley, it reaches over 18° C. The hottest temperature that can be reached is over 40° C, in the southern and southeastern parts of the basin. The coldest temperature in the southern part of the basin is from 12° C to -4° C; in the northern part, from -4° C to -8° C and on the northern border, near -10° C. The annual rainfall in most of the basin is 1,000 to 2,000 m, 40-60 percent of which falls in the summer. The Sichuan basin is one of our country's regions with the least sunshine, approximately 1,000 to 1,400 hours annually, an average of only 3 hours per day. When spring is changing into summer, there is considerable hail and often strong gusts of wind due to the influence of mountains on all sides. These phenomena have an extremely adverse effect on agricultural crops.

Temperatures are low in the Garze and Aba Prefectures on the western plateau. There is a lot of frost and snow, little rainfall and abundant sunshine. The average temperature is over 12° C. The coldest temperature for most of the area is less than -20° C while a small part of the area hits below -30° C. There generally is no summer season except in some river valley areas at low elevations, due to the overwhelmingly low temperatures. It is winter practically all year round. The frost-free season is short, fewer than 100 days per year and less than 50 days in the north. The rainfall is from 600 to 800 m. About 80 percent of the annual rainfall falls during the rainy season from May to September. The cold season is from October to the next April. Sunshine is plentiful in the western Sichuan plateau, generally reaching over 2,000 hours annually. Some of the area gets 2,500 hours and it belongs to the country's areas of plentiful sunshine. There is considerable wind and hail in the plateau. There is a lot of gusty wind in the Anning River valley; wind speeds can reach force 12, adversely affecting agriculture and animal husbandry.

II. The Development of Sichuan's Economy in the 32 Years Since Liberation

Sichuan is one of the country's areas that developed an economy rather early. In the distant silkworm grove period of ancient legend, it was already celebrated for sericulture. The province's name is related to sericulture. In the Warring States period, Li Bing was a guardian of the province. He built the Dujiangyan Weir headwork, irrigated the Chengdu Plateau and opened rice fields; there was a great expanse of fertile land. It was praised as a "land of plenty." In the Qin-Han period, the Chengdu Plateau had already become an important rice-producing area. Salt production and iron smelting were also quite developed. Salt wells were spread all over present-day Shuangliu, Santai, Jianyang, Zhongxian, Yanyuan and other areas. Qionglai and elsewhere had begun to use natural gas to decoct salt. The most famous handicrafts were gold and silver implements, lacquerware and Sichuan knives, cloth and cotton. At that time Chengdu and Chongqing were already economic centers. Along with Loyang, Handan, Linzi and Wancheng, Chengdu had equal fame as one of the five cities called "western capitals" in the Han period. Sichuan's economy flourished even more during the Tang and Song dynasties. Its agricultural production equalled areas south of the lower reaches of the Chang Jiang. It was as famous as Hunan and Hubei in terms of the level of intensive agriculture. Wheat was quite widespread and silk cotton gradually emerged. The most famous silk goods were spun silk, silk gauze and damask silk. The arts of papermaking and printing were considerable developed. In the Tang dynasty, coarse Yizhou paper was famous nationwide. In the Song, the city had become one of the country's printing centers. During the Tang, Sichuan had an extensive tea-producing area. Mengding tea from Yazhou was prized. In the time of Zhenzong during the Song, 16 wealthy merchants issued "exchange notes," the earliest paper currency discovered so far. Via the upper reaches of the Chang Jiang, goods from Sichuan were transported and sold in various distant provinces along the lower reaches. The land route went from the Central Plain in the north and extended to the compact communities of various fraternal nationalities in the west. Sichuan's agriculture, handicraft industries and technology were upgraded anew during the Ming and Qing periods; salt production further developed and many salt industry capitalists appeared. Sichuan's iron was sold in far-off Jiangsu and Wuxi. Production of iron and steel was in fourth place nationwide, second only to Hunan, Hubei, Guangzhou and Fujian. Silk was sold in distant Suzhou, Quanzhou, Zhangzhou and elsewhere. By the early Qing, Chengdu, Jiading (Leshan) and Shunqing (Nanchong) had become major silk centers. In sum, in the feudal society that lasted 2,000 years, Sichuan's agriculture, its handicraft industries and commerce and particularly its production of salt, iron smelting, papermaking, salt and tea held an extremely important place nationwide. These industries were important sources for the collection of grain and taxes by the feudal dynasties of past ages.

After the Opium War, the economic development of Sichuan was greatly limited. On the eve of liberation (1949) the province's gross industrial and agricultural output value was only 4.351 million yuan and of this the agricultural output value was 3.62 billion yuan, or 83.2 percent. The output of the main agricultural products were: grain at only 29.89 million jin, cotton at 307,000 dan, oil crops at 2.72 million dan and sugar crops at 11.38 million dan. Industrial output value was 731 million yuan, mainly in the

light and textile industries, accounting for 79.2 percent, while the heavy industry output value was only 20.8 percent with only 9,000 tons of steel, 2.01 million tons of raw coal, 147 million kw hours of generated electricity and 66,300 bales of cotton yarn. Transport was really inadequate, for in the whole province there was not one rail line; navigable mileage on inland waterways was only 8,024 km, road mileage suitable for motor vehicles was 8,581 m, but only 4,846 km of this was all weather, and over 60 percent of the counties were not accessible by road. Scientific, cultural, educational and health efforts were also very backward. In the whole province there was an average of only 26 students in school for every 10,000 persons, only 1 hospital bed for every 30,000 persons and on the average there was not even 1 health professional for every 20,000 persons. Widespread rural ignorance, a prevalent superstitiousness, manifold contagious diseases and local epidemics could not be effectively controlled.

After liberation, the totally devastated Sichuan received new life and in the past 32 years its economic and social development has had great success, chiefly manifested in:

1. Our Province Has Carried Out Large-scale Capital Construction Since the Nation's Founding and Especially Since the Three Lines of Construction.

From 1950 to 1981 the cumulative total of capital construction investment was 54.562 billion yuan; of this, industrial departments accounted for 68.4 percent, or 37,293 billion yuan. Agriculture, forestry and water conservancy departments were 3.315 billion yuan or 6.1 percent; transportation and post and telecommunications, 8.628 billion yuan or 15.8 percent; commercial, grain and financial departments, 1.608 billion yuan or 2.9 percent; education, health and scientific research, 1.514 billion yuan or 2.8 percent; urban construction, 822 million yuan or 1.5 percent; and others, 1.382 billion yuan or 2.6 percent. Especially since the "Third 5-Year Plan" period, in order to develop Sichuan's economy by establishing a rather substantial technological base and energetically promote Sichuan's economic development, the state carried out a large-scale three-line construction in the province with industrial investment reaching 28.6 billion yuan, accounting for 68.2 percent of the total amount of investment. In 1981, the province's gross industrial and agricultural output value reached 48.47 billion yuan, and according to constant prices this was an increase of 8.75 times over 1949 with an average annual growth rate of 7.1 percent.

2. Industrial Bases with Rather Complete Categories and Certain Production Capacities and Standards Have Been Tentatively Formed.

The province has newly constructed or extended 408 large and middle-sized enterprises. It established 29 city and town industries each having over 50,000 persons, over 40 city and town industries of about 20,000 people and over 60 industries outside of towns. By the end of 1981 fixed industrial assets in the province reached 33.5 billion yuan, of which industries owned by the whole people reached 31.0 billion yuan, ranking second in the country. There were 46,254 industrial enterprises employing over 3.21 million people and having a gross industrial output value of 27.533 billion yuan, a 46-fold increase over 1949, with an average annual growth rate of 12.8 percent,

ranking fifth in the country in terms of growth rate. In terms of product output in 1981, the output of steel was 3.025 million tons, a 335-fold increase over 1949; 2.697 million tons of raw iron, a 268.7-fold increase; 2.199 million tons of rolled steel, a 365.5-fold increase; 39.4 million tons of coal, a 18.6-fold increase; 16.41 billion kw hours of electricity, a 110.6-fold increase; 5.78 billion cubic meters of natural gas, a 524.5-fold increase; 125,700 tons of cotton yarn, a 9.5-fold increase; and 147,500 tons of sugar, a 5-fold increase. In particular, machinery, electronics, military industries, metallurgy and chemicals have an important standing in the whole country.

3. A Great Number of Farmland Irrigation Facilities Have Been Constructed, Production Conditions Improved and the Ability To Overcome Natural Disasters Strengthened and Agricultural Development Promoted.

In 1981 the area of effectively irrigated farmland reached 45.538 million mu, comprising 46.1 percent of the cultivated land area, a 4-fold increase over 1949; the total mechanical power for agricultural use was 9.73 million horsepower and the amount of chemical fertilizer utilized reached 1.1923 million tons. Rural electricity use in 1981 was 1.618 billion kw-hours, an 11-fold increase over the amount of electricity generated in the whole province in 1949. In 1981 the province's gross agricultural output value reached 20.94 billion yuan, a 2.12-fold increase over 1949, with a yearly growth rate of 3.6 percent. Total grain production was 69.31 billion jin, a 2-3-fold increase; 1.734 million dan of cotton, a 5.6-fold increase; and 19.501 million dan of rapeseed oil, a 4.1-fold increase.

4. Communications and Transportation Have Been Greatly Improved.

Since the founding of the country, the province has constructed 5 main rail lines and 14 feeder lines, and in 1981 the length of railways within the province reached 2,598 km. There were 8,169 km of navigable inland waterways, a 1.9 percent increase over 1949. The length of roads suitable for motor transport reached 8,249 km, a 9-fold increase over 1949, and except for Rongxian County, every county is accessible by road. The volume of freight transported increased from 2.144 million tons in 1949 to 118.442 million tons, a 54-fold increase with an average annual growth rate of 13.4 percent. At present, a rail, highway, waterway and air transportation network has already been basically set up, centered around the two cities of Chengdu and Chongqing. It will have a great role in enlivening Sichuan's future economic development.

5. Enormous Development Has Been Achieved in Minority Nationality Areas.

The society and economy in such minority nationality areas as Garze, Aba and Liangshan were completely backward before liberation. The rule of slavery and serfdom was ended after liberation and their economies experienced rapid development. Comparing 1981 to the initial period of liberation, gross industrial and agricultural output value increased 3.5-fold, with a 13.8-fold increase for industry, while agriculture doubled. Before liberation, minority areas basically had no industry, but at present there

are already 2,135 industrial enterprises, over 17,700 km of roads suitable for motor vehicles, 387 km of railway, 406 km of navigable inland waterways and a total post-road length of 46,000 km. Purchases of agricultural and sideline products increased 20 times in total value, total retail sales of social commodities increased 9.8 times and financial revenue increased 8.6 times. Three technical high schools have been established and the 3 middle schools that there were at the beginning of liberation have increased to 25. The number of students attending schools of all types has increased 7.3 times, and the number of hospital beds increased 7.7-fold. The originally destitute and backward appearance of the minority areas has been transformed.

6. The People's Material Consumption, Cultural Life and Level of Health Have All Been Considerably Improved.

Total retail sales of social commodities in the province have increased from 1.03 billion yuan in 1949 to 16.59 billion yuan in 1981, an 8.7-fold increase excluding price factors, with an average annual growth rate of 7.1 percent. The province has 46 high schools, 263 technical middle schools, over 5,000 ordinary middle schools and over 90,000 elementary schools; the number of students in all types of schools increased from 1,514,900 in 1949 to 19,867,000 in 1981, a 12-fold increase at an average yearly growth rate of 8.4 percent. There are over 19,000 health organizations in the province, and hospital beds increased from 1,972 to 181,300, a 91-fold increase at an average annual growth rate of 15.2 percent. Motion picture projection units of various types increased from 30 to 9,210 and cultural centers from 118 to 2,462. There have been established 518 independent scientific research organizations producing over 6,000 important scientific achievements. In 1981, the remaining sum of urban and rural savings deposits reached 2.82 billion yuan, a 54-fold increase over 1952. The infant mortality rate dropped from 20 percent before the country's founding to 2 percent. The mortality rate of the population has dropped from 1.206 percent in 1957 to 0.702 percent. The average life expectancy has risen from 35 years in the initial period after founding the country to 68 years in 1981.

III. The Strengths and Weaknesses of Sichuan's Economic Development

There are three advantageous conditions, three major strengths and three disadvantageous factors in Sichuan's economic development.

1. Three advantageous conditions:

(1) Natural Resources Are Abundant; Plant or Animal, Mineral or Hydro-Electric, All the Resources are Extremely Important to the Country.

According to incomplete statistics for plant resources, the province has 232 kinds of vascular bundle plants, 1,621 genuses and 9,249 varieties, approximately one-third of what the entire country has, of which the gymnosperm type are the most plentiful, ranking first in the country. Angiosperm rank second in the country, yet there are over 460 angiospermous strains peculiar to Sichuan. There are more than 4,000 varieties of plants in the province, of which the high output and good quality of oranges and

tangerines are famous. Tea leaves, silkworm cocoons, raw lacquer, Chinese prickly ash and gallnut also hold considerable reputations. There are over 3,200 strains of medical plants and more than 10 percent of the whole country's output is from here. Chinese caterpillar fungus (*Cordyceps sinensis*), the bulb of fritillary (*Fritillaria thunbergii*), the rhizome of chuanxiong (*Lingusticum wallichii*), the tuber of elevated gastrodia (*Gastrodia elata*), the rhizome of Chinese goldthread (*Coptis chinensis*), the bark of eucommia (*Eucommia ulmoides*), the root of membranous milk vetch (*Astragalus membranaceus*) and others are renowned throughout the country and overseas. There are about 300 or so varieties of vegetable oil. Of the woody plants, tung oil, tea oil, Chinese tallow tree and walnut are all celebrated. There are also many varieties of herbaceous oils and over 200 strains of aromatic oil plants.

As for animal resources, there are over 100 species of vertebrates alone, about 40 percent of the whole country's figure, of which there are 572 species of birds and 185 of animals, approximately one-half of the birds and beasts of the entire country. The province has 55 of the 100 key species of rare animals protected by the state, such as giant pandas, takins, golden monkeys, sikas, wild yaks, snow leopards, South China tigers, Tibetan snow cocks, otters and pangolins. There are also 166 species of vertebrates that have medicinal uses. Musk, bear bladders, tiger bones, deer tails and the pilose antlers of young stags are rare medicines. The entire province has over 200 species of fish, of which over 60 are the principal stocks of fish, including our famous grass carp, black carp, silver carp and crucian carp. Sichuan is the main producer of the rare central China sturgeon, the dadi sturgeon and the white sturgeon. The Changwen (river), Qikou, Chongkou liefu (fine scaled) and Hjuia (catfish) are special Sichuan products.

Mineral resources are also ample. In the whole province, 134 useful minerals have been discovered. Of the 78 known deposits, 28 are among the best in the country. Vanadium, titanium, strontium, gallium, mang optic flourite, cement mortar and natural gas all rank first in the country. Twelve rank second, including iron, manganese, nickel, mica, asbestos, sulphur and iron ore. Phosphorous, sylvite and others also hold an important place in the country. Sichuan is one province with a good set of resources due to its rather complete variety of minerals.

Sichuan is one of the provinces with the most plentiful hydroelectric resources in the country. There are 1,300 large and small rivers in the province and 267 which have drainage areas greater than 500 square meters. Major rivers include the Changjiang, Jinshajiang, Yalongjiang, Daduhe Qingyijiang, Minjiang, Tuojiang, Jialingjiang, Qujiang, Chishuijiang and Wujiang Rivers, theoretically amounting to 150 million kw of hydroelectric power, approximately one-fourth of the country's. Of this, 91.65 million kw of hydroelectric resources can be developed, ranking first in the nation. The planned development of Sichuan's hydroelectric resources is extremely important for solving the energy problems of the whole country and speeding up construction of the four modernizations.

(2) Labor Resources Are Ample.

According to 1981 statistics, the province's urban and rural social work force was over 45.74 million persons, ranking first in the country at 10.6 percent. Of this, the agricultural work force also ranked first, at over 38.20 million persons, or 11.7 percent of the country. The city and town workforce was 7.445 million, ranking second nationwide at 6.8 percent. Of this, there were 5.764 million workers in enterprises owned by the whole people, ranking first in the country, and 1.681 million workers in collective enterprises, fourth nationwide, after Jiangsu, Liaoning and Guangdong. At the same time, there is great potential in the labor resources of the younger generation. According to model examinations in Wenjiang, Neijiang, Nanchong, Mianyang, Yibin and elsewhere, after implementation of the cash and kind payment and responsibility systems in households, there has been a 40 percent surplus of agricultural labor. This has provided extremely beneficial conditions for the full utilization of natural resources and the development of a diversified economy and labor-intensive industries for a better range and quality of production.

(3) Provincial Markets Are Expanding.

To satisfy the needs of the province's almost 100 million persons in terms of food, clothing, shelter, durables, transportation, education, hospitalization and culture requires that socialist commodity production develop enormously. This would provide a vast market for the economic development of the entire province. Since the 3d Plenary Session of the 11th Party Central Committee, the people's purchasing power has gotten higher and higher and their demands for commodities greater and greater. In 1949 the volume of retail sales for social commodities was only 990 million yuan; it increased nearly 15 times by 1981, to 15.79 billion yuan, of which the 1978-1981 period saw an increase of 6.534 billion yuan.

2. Three major advantages:

(1) The Potential Is Great for Grain Production and Putting Forestry and Animal Husbandry First in a Diversified Economy.

There are nearly 100 million mu of cultivated land in the province, over 240 million mu of forest and the Yilin wasteland. The area of cultivated land, forests and grassy fields and slopes is in the forefront of all provinces nationwide and is beneficial to the development of various agricultural industries, forestry, fruit growing and animal husbandry.

Sichuan is one of the country's major grain-producing areas. In 1981 the area of cultivated land was 98.68 million mu, or 11.6 percent of the overall land area, ranking fourth in the country, of which the area of paddy fields was 49.218 mu, or 49.9 percent of the cultivated land, ranking first nationwide. The area of dry land was 49.461 million mu, or 50.1 percent of the cultivated area. The area of effectively irrigated land was 45.54 million mu, or 46.1 percent of the land cultivated, or 11th place nationwide. The area of land where stable yields were ensured despite droughts or

or excessive rains was 24.311 million mu, or 24.6 percent of the cultivated land, or seventh place nationwide. The major grain crops were rice, wheat, corn and sweet potatoes. In 1981, total grain output was 69.31 billion jin, or 10.7 percent of the country's, ranking in first place, of which rice output was 32.78 billion jin, or 11 percent of the nation's, or second place. The output of potatoes was 10.26 billion jin, or 19.77 percent of the country's, or first place. Sichuan is one of the country's four large production areas for wheat; output reached 10.28 billion jin. The major cash crops were oil, sugarcane, hemp and tobacco, of which the 1981 output for rapeseed was 16.655 million dan, one-fourth of the national output. The output of sugarcane is only behind that of Guangdong, Guangxi, Fujian and Yunnan. Sichuan was one of our country's major ramie and tobacco leaf-producing areas; 1981 outputs were 251,000 dan and 1.773 million dan, respectively.

There are very outstanding advantages to the major animal husbandry industries of hogstock, cattle and sheep raising. The province has 245 million mu of usable grasslands and slopes, or 28.7 percent of the entire province's area, of which the northwestern Sichuan grassland is 169 million mu. As one of the country's five major animal husbandry areas, the 76 million or so mu of the inner basin and its surrounding grassy mountains and slopes are also places well suited to the development of animal husbandry. In 1981, the province had over 9.6 million head of livestock. There were 50.23 million head of live hogstock on hand, 2.34 million buffalo and 2.69 million cattle, all ranking first nationwide. Of the 10.63 million sheep, 6.81 million were goats, ranking third in the country. Sheep and horses are among the best in all southern provinces.

Sichuan is one of the country's three large forest zones and a major production base for wood. The province has over 227 million mu of land suited to forestry, or 26.6 percent of the whole area. Of this, there are 110 million mu of forests, or 6 percent of the whole country. There are 134.6 million cubic meters of timber in store, or 15.3 percent of the country's. The advantages are more pronounced from the aspect of cash forestry in particular. For example, the output of tung oil is 38.6 percent of the whole country's, ranking in first place. The silkworm cocoon output is 35.7 percent of the whole country, holding first place. In recent years Sichuan has ranked first nationwide for orange and tangerine output; annual output is about 40 percent of the country's. It ranks second for raw lacquer and gallnut output, third for juanzi (Chinese tallow tree) and fourth for tea leaves. Chinese prickly ash, Chinese chestnuts, palm leaves, tea-oil, nanzhu [2809 4554], ciju [1564 4554], muer (*Auricularia auricula-judae*), tremella and various medicinal materials rank in a certain place in the whole country.

However, the advantages of grain production and a diversified economy centered around forestry and animal husbandry have not been brought fully into play. The potential is still great. Taking rice as an example of grain production, in 1981 the province's per-mu yield was 698 jin, ranging from over 1,300 jin at the highest to just over 500 jin at the lowest. Under similar irrigation, climate and soil conditions, there was a wide gap of over 300 jin per unit of area yield. The total grain output can double and redouble if irrigation is improved, the cropping system changed, the area of hybrid rice

expanded, the multiple-crop index upgraded and low yields become higher. As for forestry, there are still 117 million mu of barren hills, sparse woods and shrub woodlands. The rate of forest cover could be improved to 20 percent by the end of this century and the rate of stored timber greatly increased if these areas suited to forestry were fully used. Or take animal husbandry; relatively little of the province's pasturage has been improved. There are only 310,000 mu of artificial pasturage and 1.02 million mu of improved pasturage. The two together only amount to 0.54 percent of the total pasturage, or 6 percent of the whole country's. On the average, 7 mu of unimproved pasturage are needed to raise one sheep while only 2 mu are needed after improvement. The livestock output can be greatly increased if improved pasturage were expanded 10-fold and upgraded to the national level. The potential for oranges and tangerines is also great. There are about 130 million or so orange and tangerine trees already planted in the province. Presently only over 35 million trees, or 27 percent of the trees planted, bear fruit. It is estimated that in 4 or 5 years production could quadruple.

(2) Sichuan's Industrial Base Is Solid Because It Has Great Production Power.

Sichuan is one of our country's important industrial bases. By the end of 1981, fixed assets of the province's enterprises owned by the whole people were basically worth 310,000 million yuan, of which heavy industry was 270.77 million, 87.3 percent. The three trades of machinery (including military industries), metallurgy and chemical industries are the province's principal heavy industries. Their fixed assets at the end of 1980 were basically valued at 60.5 percent of the province's industrial fixed assets and at 9.2 percent of the country's fixed assets for the same trades, ranking second in the whole country, behind only Liaoning.

Considering output values for these three trades, in 1981 it was 115.55 million yuan, 42 percent of the province's gross output value and 5.4 percent of the entire country's output value for the same trades.

As for technology and equipment, the province has 160,000 metal-cutting machine tools and ranks fourth in the country. Included here are 9,000 large units of refining and sharpening equipment. Many of these are in short supply nationwide. For example, there are 10,000-ton or larger hydraulic presses, 16-ton or larger pattern forging hammers, 7-ton (?self-consuming) [zihao 5261 5088] vacuum furnaces and 1,700-kw electron-bombardment furnaces.

Turning to productive capacities, the province presently can provide 1,000- to 4,000-mm large-scale rolling mills, complete sets of equipment for steelworks of less than 300,000 tons, 30-ton synthetic ammonia equipment, 50,000- to 300,000-kw large-scale generating units, complete sets of equipment for nuclear power plants, 15 to 40-ton mid-sized vehicles, complete installations for loading and transporting petroleum gas, mining equipment for 18 major categories and over 50 types of instruments and meters in 11 major categories.

Mainly due to the service orientation of heavy industry and an irrational product mix, the development of equipment capacity has been adversely

affected. Equipment capacity has been poor, at approximately only 60 percent, although heavy industry has a great production capacity. The product mix of Sichuan's heavy industry has been that what is large is plentiful and what is small is scarce. Main engines are plentiful, while ancillary equipment is scarce. Products needed for the national defense and capital construction services are many, while those directed toward agriculture, light industrial markets and the people's livelihood are few. In 1981, for example, the province's output value for light industry products was only 3.7 percent of that for heavy industry, whereas it was 5.3 percent in Jiangsu and 6.4 percent in Shanghai. The large-scale steel products commonly used in metallurgical industries account for 15.8 percent of the province's steel products output, whereas Shanghai's is only 0.17 percent and Liaoning's 3 percent. The entire province's output proportion for sheet metal and strip steel urgently needed by the market is very small. The national average is 13.7 percent; the average for Liaoning, 20.7 percent; for Hubei, 36.8 percent; and for Sichuan, only 5.1 percent. The proportion is also very small for machinery used in the livelihood services and for metal articles used daily. The national average is 17.9 percent; the average for Shanghai, 25.9 percent, but for our province, only 8.7 percent. The energy shortage, especially natural gas supplies that cannot meet demands, has had an extremely adverse influence upon heavy industry, particularly the metallurgical and chemical industries. However, we can certainly bring into further play the advantages of heavy industry and promote the development of Sichuan's economy provided that we adjust the product mix for heavy industries, correctly implement the principle of "military and civilian unity," organize specialized production and cooperation and strengthen the construction of energy resources.

(3) There Is Great Development Potential in Taking Agricultural and Sideline Products as Important Raw Material Processing Industries.

Processing industries in the province which have advantages for development mainly include the foodstuffs, silk, leather, hemp and textile industries.

The industrial output value for the key foodstuff industries of grain and oil processing, salt and sugar production, wine making and cigarettes is approximately 20.3 percent of the province's gross industrial output value. Of these the wine, canned goods, candy and beverage industries are advantageous to being developed. A group of famous special products has long held a high reputation in the foodstuffs industries. The quality of Yibin Wuliangye, Mianju Jiannanchun, Luzhou Teq [wines], Daxian Dengying beef, Neijiang preserved fruit, Fuling hot pickled mustard tubers, Hechuan sliced peaches, Pixian and Ziyang broad beans, Jiajiang and Zhongxian fermented bean curd, Guanghan Chansi rabbit and Jiangjin peanut candy is excellent. Supply cannot meet demand and they are competitive.

The province ranks first in the country for its output of nearly 2 million dan of silkworm cocoons. It is estimated that this could exceed 3 million dan within 7 or 8 years. Presently the province ranks fourth in the country for woven silks; it has a 333,000-thread silk reel capacity. Our province's silk industries will certainly be considerably developed along with improvements in woven silk, printing and dyeing and finishing capabilities.

Leather and fur goods are traditional products of our province. Their export volume is considerable. In terms of annual output in the whole country, leather and leather goods rank in third and fifth places, respectively. The leather industry accounts for 7.7 percent of the entire country's fixed assets. Moreover, our province is rich in hide resources. Leather and products made of it will become our province's "model" products if we can fully utilize the resources, improve product quality and increase product variety, designs and colors.

In a comparison of the hemp and cotton textile industries, our province has an advantage in terms of resources. The annual output has exceeded 200,000 dan for ramie and 2 million dan for jute and bluish dogbane. The hemp textile advantage can be further developed provided that we expand our processing capacities.

3. Three disadvantageous factors:

(1) The Population Is Large, Cultivated Land Is Small and Social Burdens Are Heavy.

Although Sichuan accounts for one-tenth of the country's area, its cultivated land area accounts for only one-sixteenth. The national per-capita cultivated land area is 1.49 mu but our province's figure is only 0.99 mu, ranking in 22d place nationwide. In 1981 the province's gross industrial and agricultural output value was 6.5 percent of the country's, at 48.5 billion yuan. The per-capita output value was only 495 yuan, lower than the national average of 757 yuan, ranking in 25th place. The per-capita income ranked 24th. In recent years the gross grain output has ranked first in the country but per-capita grain allocation has ranked eighth or ninth. Per-capita consumption has been 20 percent less than the national figure.

The population puts great pressures on culture and education. In 1981, Sichuan ranked in 22d place nationwide for having only 8.8 persons per 10,000 who were college educated, versus the national average of 13. Sichuan ranked in 23d place for having 358 persons per 10,000 in lower middle school, versus the national average of 422 persons. The province ranked 25th for having 50 persons per 10,000 in higher middle school, versus the national average of 73, and in 22d place for having 91.3 percent of the school age children in school. Over 38.57 million persons, or 38.7 percent of the province's population, are illiterate or semi-illiterate. After subtracting children under 5 years of age, the figure is still 29.9 percent, of which those 12 years and older account for 23.4 percent of the population, or over 23.31 million people.

Sichuan's population base is great and the rate of increase has been rapid. In 1949, the province's population was more than 57.3 million persons; the July 1982 census saw a population of over 99.81 million. There was an increase of over 42.51 million in a period of only 32 years, for an average annual increase of 1.328 million people. If the population is not controlled, not only will greater pressures be put on the employment of labor, urban facilities, housing construction, medical and health services, etc., but it can also adversely affect the pace of Sichuan's economic development.

(2) Management Levels Are Low and Economic Results Are Substandard.

In 1981, the output achieved by every 100 yuan of fixed assets in Sichuan's enterprises owned by the whole people was 34 percent lower than the national average, ranking 21st in the country. Taxes and profits achieved with the same amount of funds was 43.1 percent lower than the whole country and the productivity of industrial labor was 27.2 percent lower than the national average, ranking 19th in the nation. Of this, labor productivity in enterprises owned by the whole people was 30.8 percent lower than the national average, in 22d place nationwide, and the rate in enterprises owned by collectives was 16.3 percent lower, in 13th place. The output value for every 100 yuan in circulating funds was 40 percent higher than the national average.

(3) Transportation Facilities Are Poor and Information Networks Ineffective.

The development of communications and transportation has been greatly restricted, because Sichuan is located inland with range upon range of mountains on all sides. The province's present rail transport capacity is seriously insufficient, adversely influencing the transport of goods and materials in and out. Presently, the province has only 31,812 km of roads that conform to national standards, or 37.7 percent of the total mileage. Communications and transportation are quite undeveloped particularly in mountainous and remote areas. One county, 869 communes and 48 percent of the land in the province are still without roads. As for inland navigation, the volume of goods transported has been falling somewhat year after year due to the inability of dredged channels and wharf construction to keep up with the demand.

IV. Several Problems in Sichuan's Economic Development Strategy with Regard to the Province's Basic Situation

In order to realize the great goals of the 12th Party Congress, we must start from the above-mentioned basic situation, fully utilize Sichuan's favorable conditions for economic development and bring into play its special advantages, while at the same time resolving problems of weak links, developing our potential and energetically turning unfavorable conditions into favorable ones, advancing with deliberation and blazing new trails. In our economic development strategy we must pay attention to the following several problems:

(1) We must lay a firm agricultural foundation and make agriculture, industry and commerce develop in coordination and promote each other. Under the unified state plan, we must establish across-the-board development of agriculture, forestry, animal husbandry, sideline production and fisheries, while at the same time simultaneously developing light and heavy industries, for an economic structure where agriculture, industry and commerce advance in coordination. Over 80 million of Sichuan's population of 100 million are peasants. The problem of feeding 100 million is truly a concern of the greatest importance, and at no time can we even think of relying on grain imports as a solution. If we treat this problem lightly, it can adversely affect overall stability and all aspects of economic development. Laying a

firm agricultural foundation also requires the full utilization of our province's forest lands of close to 500 million mu of uncultivated land such as mountainous areas, grasslands, overgrown slopes, swamps, etc. and our vast waters; the energetic development of forestry, animal husbandry, fisheries, tea, sericulture, fruit, medicinal materials and special mountain products; and the further transformation of the disparate and irrational agricultural infrastructure. We must bring into full play the advantages of natural and labor resources; actively develop agricultural specialized households (priority household); develop rural enterprises; implement coordinated agricultural, industrial and commercial management; and upgrade the commodity rate for agricultural and sideline products. Once agriculture is developed and the rural areas prosper, then we can supply the cities with abundant food and industry with sufficient raw materials, create markets for industrial commodities which are reliable and full of bright marketing prospects and promote the province's overall upsurge in modernization. Sichuan is located inland, and its conditions for economic development are somewhat different from those of the coastal areas. Thus we must energetically produce a group of commodities that are competitive, particularly capital goods, and introduce them in the international and national markets. However, even more industrial goods, especially consumer goods, should be geared to markets in our province and the southwest and to the extensive rural areas. In view of Sichuan's resources and present base, we cannot develop heavy industries all alone, nor can we one-sidedly stress light industries. While speeding up the development of light industries we must bring into further play the role of the three-line heavy industrial base.

(2) We must solve the three great problems constraining our province's economic development, namely strained transportation, serious insufficiencies in already developed energy resources and a disjointed system of military and civilian industries. Not only is Sichuan's interior transport inconvenient, but the five passages exiting the province (the Baoji-Chengdu, Chengdu-Kunming, Sichuan-Guizhou and Yiangyan-Chongqing rail lines and the Chang Jiang channel) all have bottleneck problems adversely affecting economic development. We must energetically improve the technical situation of our present railways and highways and carry out according to plan and strive to complete early the electrification project for the Chengdu-Chongqing, Xiangyang-Chongqing and Sichuan-Guizhou railways, improve the efficiency of freight transport, construct several railways and highways according to plan, in particular bringing into full play the advantageous conditions of our network of rivers, and positively consolidate and develop the water freight of the Chang Jiang and other rivers. In Sichuan's energy construction, we must pay equal attention to adherence to both development and economizing and stress energy conservation in the near future. On the one hand, we must by every means possible raise various energy utilization rates via technological transformation and strengthened management, turning around the backward situation of high energy consumption and great waste. On the other hand, we must emphasize work in the early stages for those new construction and reconstruction energy projects arranged by the state which have not yet begun and ensure the scheduling and quality of those already begun. From the long-term view, Sichuan's energy development policy should stress hydro-electric power, using both hydroelectric and thermal power, and actively carry

out exploration for coal, natural gas and other energy resources, developing and unifying their uses. Sichuan's military industry enterprises are complete and fully equipped. Many facilities are at an advanced level in the country and engineering and technical personnel are numerous. To change the disparity between civilian and military industries as soon as possible, we must further implement reforms from the systemic level and explore new routes for compatible military and civilian production. The direction of reform should be: the province and cities are to assign production plans centrally for civilian goods, cooperate with nearby organizations, speed up the transfer of military technology to civilian industries and bring into full play the advantages of solid technological strength and advanced equipment, under the premise of guaranteeing the organization of military industrial enterprises to fulfill the production tasks for military goods as directed by the state. In this way economic results will greatly increase.

(3) We must incorporate the standpoint of quadrupling in stressing reform and technological transfer and make overall improvements in the economic results of our current enterprises. At present our province has over 40,000 people's and collective industrial enterprises, but a vast majority of their economic results are relatively poor. In order to raise economic results comprehensively on the basis of overall consolidation and comprehensive enterprise administration, we must further reform the management systems, completely improve the economic administration systems and the methods of sharing responsibilities and make enterprise management progressively scientific and modernized. To rationalize the organizational structure of enterprises, we must, according to economic rationality and the principle of specialized cooperation, further readjust and reorganize current enterprises. We must implement large-scale technological transformation in a planned way, using domestic and foreign advanced technology to equip our enterprises, basically solving the problems of developing product variety, improving quality and lowering consumption.

(4) We must stress comprehensive reforms for Chongqing and the comprehensive development of Panxi, strategically implement key breakthroughs and progressively create large, medium and small economic zones that are compatible with cities and villages and that have their own characteristics and are centered around cities and industrial bases. The central government has decided to implement a comprehensive reform experiment in Chongqing. The goal is to develop a southwestern economic service zone centered in Chongqing and organize and ascend a new path of coordinated military and civilian production. This requires unifying odds and ends, and cities and villages, via economic measures, developing the economy and forming an economic network centered in Chongqing. On the opposite end of this, in order to speed up the development of western Sichuan and the whole of the southwest, we should formulate comprehensive development schedules for the Panzhihua and Xichang areas and the Liang Shan and Dukou areas called the "Pzn-Xi Rift Valley," extremely rich in ferrous and non-ferrous metals, especially vanadium, titanium and magnetite, with economic values unequalled domestically. The water power resources of the Jinshajiang and Yalongjiang Rivers are also extremely abundant. On the two shoals in the area around Dakou alone, a hydroelectric power station with a 3-million kw installed

capacity could be built, and one with a 400,000 kw capacity could be built in the Tong Forest. If the second phase of the Pan steel project can be arranged at an early date, the comprehensive use of vanadium and titanium increased, the Two Shoals power station developed and both agriculture and light industry developed according to local semitropical climatic characteristics, then Sichuan's western area will become an economic zone with a bright future, built around the nonferrous metal industries of high economic value and great electricity consumption.

(5) In Sichuan, persistence in birth control, economizing on land use and reforestation are particularly important and of urgent significance. For this reason, we must continue to raise the first-birth rate, seriously restrict second births, firmly put an end to third births, do well in giving birth and educating and protect females babies. By the year 2000 the total provincial population must be held to below 120 million. We must arrest the trend of decreasing cultivated land and cherish every inch of it. We must halt the shrinkage of forests through uncontrolled felling of trees, implement various forestry policies, launch massive reforestation and forest protection, make green the fatherland, increase vegetation, construct ecological defenses and create wealth for future generations.

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